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Griet Coupé

Syntactic extension

The historical development of Dutch verb clusters

Dutch verb clusters typically occur when a main verb is combined with one or more auxiliaries in the same (sub)clause. This dissertation provides a diachronic account of these Dutch verb clusters, focusing specifically on the auxiliaries *hebben* and *zullen*. The diachronic development of these auxiliaries is characterised by an increase in semantic scope. From a syntactic point of view, these auxiliaries form an increasingly tight syntactic unit with their verbal complements.

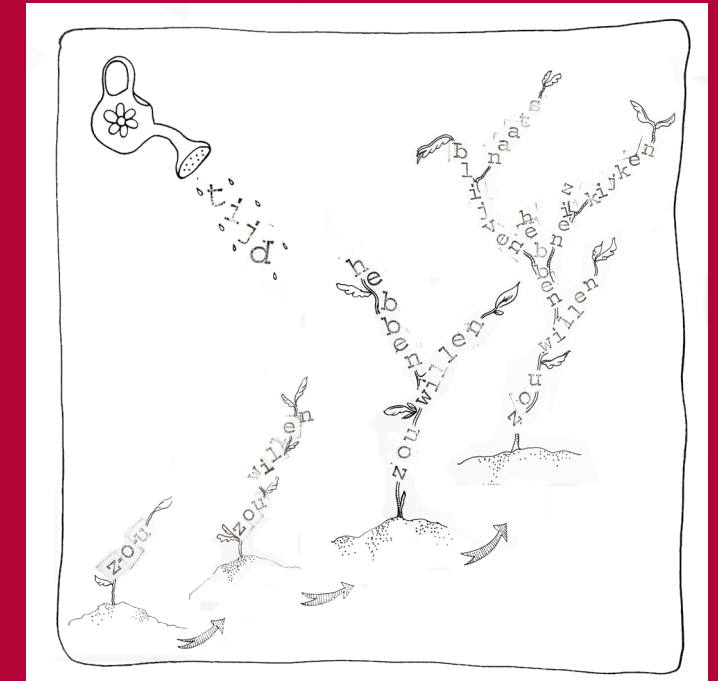
This study focuses on three Dutch dialects in the period between 1300 and 1600. Two syntactic innovations in these dialects are studied: the development of the double modal construction and the development of the Infinitivus Pro Participio-effect. It is argued that both innovations are made possible by the scope increase of auxiliaries like *hebben* and *zullen*. This leads to an increasing number of verbs that may appear in the complement of these auxiliaries, yielding longer verb clusters.

While the verb order is variable both in two-verb clusters and in long verb clusters, long clusters almost invariably have the finite verb before its immediate complement and show a clear preference for the 1-2-3-(4) order. The preposing of the finite verb is explained as avoidance of syntagm ambiguity, while the 'linear order' is assumed to be an effect of a preference in long clusters to reflect the underlying syntactic hierarchy. It is argued that the increasing frequency of long verb clusters with 1-2-3-(4) order may have contributed to the rise of the 1-2 order that is witnessed in two-verb clusters.

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Syntactic extension

The historical development of

Dutch verb clusters

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Contents

Chapter 1 – Introduction	1
1.1 The Dutch verb cluster	1
1.2 The historical development of verb clusters	2
1.3 Focus of this study	3
1.3.1 Short and long verb clusters	3
1.3.2 Late Middle Dutch	4
1.3.3 A note on Low Saxon dialects	5
1.3.4 Dutch and other West-Germanic languages	5
1.4 Theoretical framework	6
1.5 Organisation of this study	7
 Chapter 2 – The Dutch verb cluster: an exploration	9
2.1 Introduction	9
2.2 Verb clusters in Present-day Dutch	10
2.2.1 The notion ‘verb cluster’	10
2.2.2 The notion ‘auxiliary’	13
2.2.3 The notion ‘syntagm’	18
2.2.4 The hierarchical structure of verb clusters	19
2.2.5 Verb order variation	23
2.2.5.1 Hierarchical and linear order	23
2.2.5.2 Terminology	24
2.2.5.3 Dutch vs. other Germanic languages	26
2.2.5.4 Order variation in two-verb clusters	27
2.2.5.5 Order variation in three-verb clusters	34
2.2.5.6 Order variation in longer verb clusters	45
2.2.5.7 Cluster interruption	47
2.2.6 The IPP-effect	48

2.3 Verb clusters from a diachronic perspective	51
2.3.1 Grammaticalisation of auxiliaries.....	52
2.3.2 Historical developments in verb order variation	57
2.3.3 Factors influencing verb order variation in historical texts	59
2.3.4 The history of the IPP-effect.....	61
2.4 Syntactic analyses of verb clusters	62
2.4.1 Mono-clausal and bi-clausal approaches.....	63
2.4.2 Movement theories: V-Raising or VP-raising	66
2.4.3 Derivational accounts of verb order variation.....	68
2.4.4 Verb order variation as linearisation at the phonetic level	72
2.5 Conclusion	73
 Chapter 3 – Research design.....	75
3.1 Introduction	75
3.2 Case studies of Dutch in transition.....	75
3.3 Corpora	78
3.4 Research method	81
3.5 Organisation of the following chapters	85
 Chapter 4 – Order variation in two-verb clusters	87
4.1 Introduction	87
4.2 Two-verb clusters in the data set.....	87
4.2.1 Overview	87
4.2.2 Avoiding bias by excluding formulaic contexts	89
4.3 Impact of variables	92
4.3.1 Variable auxiliary.....	92
4.3.2 Variable time.....	93
4.3.3 Variable dialect	96
4.4 Discussion	100
4.5 Conclusion	104

Chapter 5 – Order variation in long verb clusters	105
5.1 Introduction	105
5.2 Three-verb clusters in the data set	106
5.2.1 Different orders	106
5.2.2 Different intermediate auxiliaries	111
5.2.3 Different syntagms	113
5.2.4 Effects of grouping auxiliary combinations as syntagms	121
5.3 Impact of variables in three-verb clusters	124
5.3.1 Variable auxiliary	124
5.3.2 Variable syntagm	126
5.3.3 Variable dialect	131
5.3.4 Variable time	133
5.3.5 Summary	136
5.4 Four-verb clusters in the data set	137
5.5 The impact of cluster length on verb order	144
5.5.1 Evidence from the corpus	145
5.5.2 Evidence from other West-Germanic languages	146
5.6 An integrated account of verb order	149
5.7 Conclusion	160
Chapter 6 – The development of double modal constructions in Dutch	161
6.1 Introduction	161
6.2 Definitions	163
6.3 Morphosyntactic change	166
6.3.1 Grammaticalisation of modal verbs in English and Dutch	166
6.3.2 Pre-modals in Proto-Germanic	168
6.3.3 The finiteness restriction in Early Germanic dialects	169
6.3.4 Modal infinitives in three-verb clusters: a Middle Dutch innovation	174

6.3.5 Spread of the innovation in Late Middle Dutch	177
6.4 The semantic development of the Dutch modal verbs	180
6.4.1 Semantic changes of modals in general	180
6.4.2 Semantic changes in the Dutch modal system	184
6.5 Historical scenario	190
6.5.1 Increasing scope of <i>zullen</i>	190
6.5.2 Syntactic extension.....	191
6.5.3 From a synthetic to an analytic system of modality	194
6.6 Conclusion	195
 Chapter 7 – The rise of the IPP-construction.....	197
7.1 Introduction	197
7.2 The IPP-construction: an exploration	198
7.2.1 Verbs undergoing IPP in Present-Day varieties of Dutch and German	199
7.2.2 Verbs undergoing IPP in earlier varieties of Dutch and German.....	205
7.2.3 IPP and verb order	208
7.2.4 IPP and cluster formation	219
7.2.5 IPP and the prefix <i>ge-</i>	225
7.2.6 Analyses of the IPP-verb.....	230
7.2.7 Theories on the origin of the IPP-effect	231
7.3 Corpus data from Middle Dutch.....	236
7.3.1 Attestations in the 13 th C. Corpus Gysseling (CG).....	236
7.3.2 Attestations in the 14 th C. Corpus Van Reenen-Mulder (CRM)	239
7.4 IPP-constructions in Late Middle Dutch.....	241
7.4.1 The IPP-context in the dialects	241
7.4.2 Verb order and the IPP-effect in the data set	246
7.4.3 Summary of the data.....	248
7.5 Discussion.....	248

7.5.1 The IPP-context and the development of the analytic hebben-perfect	249
7.5.2 The IPP-effect starts with causatives	252
7.5.3 Deviating morphology	252
7.6 Conclusion	253
Chapter 8 – A historical scenario	255
8.1 Introduction	255
8.2 Summary of findings	255
8.2.1 Verb order developments	255
8.2.2 Innovative constructions	257
8.3 Relationship between the rise of the double modal construction and the IPP-effect.....	259
8.4. Correlation between innovative constructions and 1-2 verb order	261
8.5 Conclusion and outlook for further research	266
References	269
1 Corpus texts	269
2 Secondary literature	271
Samenvatting (Dutch summary)	299
Dankwoord	307
Curriculum Vitae	311

Chapter 1 – Introduction

1.1 The Dutch verb cluster

A distinctive characteristic of Present-day Dutch syntax is that different verbs may co-occur in one clause, which often yields a cluster of verbs. Dutch verbs typically appear clause-finally, especially in subclauses. A cluster of verbs, then, occurs when the main verb is combined with one or more auxiliaries in the same subclause. Some examples are given below:

- (1) *dat Louise een appel eet*
that Louise an apple eats
'that Louise eats an apple'
- (2) *dat Louise een appel wil eten / eten wil*
that Louise an apple wants eat.INF eat.INF wants
'that Louise wants to eat an apple'
- (3) *dat Louise een appel heeft gegeten / gegeten heeft*
that Louise an apple has eaten.PTCP eaten.PTCP has
'that Louise wants to eat an apple'
- (4) *dat Louise een appel zal willen eten*
that Louise an apple shall want.INF eat.INF
'that Louise will want to eat an apple'
- (5) *dat Louise een appel heeft willen eten*
that Louise an apple has want.IPP eat.INF
'that Louise has wanted to eat an apple'
- (6) *dat Kasper Louise een appel zou kunnen hebben willen zien eten*
that Kasper Louise an apple should can.INF have.INF want.INF
see.INF eat.INF
'that Kasper might have wanted to see Louise eat an apple'

The interest of these clause-final verb clusters for linguists is manifold. First of all, the verbs that appear clause-finally are almost invariably uninterrupted by non-verbal elements, suggesting that they form a tight syntactic unit, even though they are still distinguishable as separate verbs. This tightness is reinforced by the fact that the verbs share their argument structure: the cluster of six verbs in (6) is a complex predicate with three arguments: *Kasper*, *Louise* and *een appel*. As can be seen in examples (2) and (3), the relative order between the auxiliary and the main verb in two-verb clusters varies: the auxiliary may either precede or follow the main verb. There is no clear semantic or pragmatic distinction between both variants, which is quite unusual from a cross-linguistic point of view.

As can be seen in examples (4) - (6), three or more verbs may appear together in a cluster. In such longer clusters the morphology of the verbs is sometimes affected in unexpected ways: we would expect a participle *gewild* 'wanted' in (5) and (6), since *willen* 'want' appears in a perfective construction with *hebben* 'have'. Instead, the verb *willen* appears in the infinitive, a phenomenon that has been called *Infinitivus Pro Participio*, abbreviated as *IPP* or *the IPP-effect*. Finally, example (6) illustrates that if many auxiliaries are stacked in one clause, this yields a long series of infinitives. Note also that two or more modal verbs, like *zullen* 'shall', *willen* 'want' and *kunnen* 'can' may be combined in such long verb clusters.

1.2 The historical development of verb clusters

Old text sources indicate that 'Dutch' verbal syntax was rather different a thousand years ago. While few sources survive from the period before 1200 that could actually be characterized as Old Dutch, the existing material and what we can infer from Old High German, Old English and Gothic sources suggests that the ability to combine different auxiliaries into a long cluster is a relatively recent phenomenon. Constructions with multiple modal verbs, like (4), or constructions with the IPP-effect, like (5), first start to appear in Middle

Dutch, after which they gain frequency in the centuries that follow. This leads to an increase in the average length of the verb cluster.

While most types of multiple-verb clusters were virtually absent in the oldest Dutch sources, two-verb clusters similar to the ones in examples (2) and (3) are actually found from the earliest records onwards. Interestingly, these instances much like in Present-day Dutch vary in terms of the relative order of the verbs. We find instances with the auxiliary preceding as well as following the main verb. Corpus research (e.g. Coussé 2008) has shown that after an initial period of variation, one of the two possible orders, i.e. the one with the auxiliary following the main verb, was almost completely dominant around 1400. In the period between 1400 and today, the order with the auxiliary first has gradually gained frequency again. This order is predominant in Present-day Dutch with auxiliaries that select an infinitive (like *willen* ‘want’ in example 2), while it still competes with the other order with auxiliaries that select a participle (like *hebben* ‘have’ in example 3).

I will argue in this study that both developments, i.e. the development of verb order in which the variant with the auxiliary before the main verb slowly but surely gains ground after 1400, and the development in which verb clusters become increasingly longer, may in fact be related to one another. This dissertation does not only contain a study of the diachronic development of verb order in different Dutch dialects from the 14th C. onwards, but also a study of the inception and the development of two syntactic innovations that made it possible for verb clusters to become longer: the ‘double modal construction’ and ‘the IPP-effect’.

1.3 Focus of this study

1.3.1 Short and long verb clusters

While some previous studies have focused on the syntactic development of two-verb clusters in Dutch, this study is the first systematic account of the history not only of two-verb clusters, but also of clusters of three and more verbs in Dutch, based on quantitative data. Comparable diachronic research on

longer clusters has been done for Early New High German by Sapp (2006) and Dubenion-Smith (2008). The present study differs from these accounts in that it also contains a close investigation of two syntactic innovations which have contributed to the increasing frequency of long verb clusters in Dutch between 1300 and 1600: the double modal construction and the IPP-construction.

1.3.2 Late Middle Dutch

The intention of this study is to reveal the long-term development of verb clusters in Dutch. More specifically, the research focus is on verb clusters in Middle Dutch (13th and 14th C.) and especially Late Middle Dutch (15th and 16th C.). The term “Middle Dutch” is actually an anachronism, since there was no such thing as a standardized Dutch language in the period under consideration. Middle Dutch is an umbrella term for different dialects spoken in the Present-day Dutch area, including the Netherlands and the northern parts of Belgium. Among these dialects are Flemish, Brabants, Limburgs, Zeelandic, Hollandic, Utrechts, and low Saxon (which includes the northern and eastern dialects of Gelderland, Overijssel, Drenthe and Groningen). There was considerable variation between these Middle Dutch dialects, lexically as well as phonologically, morphologically and syntactically (e.g. Van Loey 1980: 3-7, Van der Wal 1992:102-121, Van der Sijs 2004:40-45).

The period under investigation, especially the 15th and 16th C., has been characterised as a transition period between Middle Dutch and Early Modern Dutch. It is the period preceding the rise of the Dutch standard language. It has often been assumed that in the course of this standardisation process, Dutch dialects experienced rapid language change due to increasing dialect contact and migration, more specifically the mass migration from southern provinces and eastern provinces (some of which today are part of Germany) towards Holland (cf. Boyce Hendriks 1998, Howell 1992, 2006, Goss and Howell 2006, Van der Sijs 2004).

Bearing in mind that standardisation of the Dutch language did not take place before the 17th C., i.e. after the period under consideration, and that the

Middle Dutch period was characterised by considerable dialect variation and dialect contact, it makes sense not to restrict an investigation of Middle Dutch to one dialect. This study will focus on three different Middle Dutch dialects: a southern dialect (Brabants), a northeastern dialect (Drents) and a dialect from the centre of the Dutch-speaking area (Utrechts).

1.3.3 A note on Low Saxon dialects

Van Loey (1980:5) argues that the northern and eastern dialects of Groningen, Drenthe, Overijssel and Gelderland should perhaps not be categorised as Middle Dutch. From a linguistic point of view these 'Low Saxon' dialects are closer to the Low German dialects. It is indeed difficult to categorise texts from former centuries without imposing our present-day political and linguistic boundaries upon them. However, for the purposes of this study it does not really matter whether or not the texts that are investigated should be categorised as Middle Dutch. What is important is that (some methodological issues aside, which we will elaborate upon further in this study) they represent a language variety that, at the time, was geographically and linguistically close to and probably also in contact with other varieties spoken in the Present-day Dutch speaking area.

1.3.4 Dutch and other West-Germanic languages

The focus is on verb clusters in Dutch rather than on other West-Germanic languages. Whenever insights from languages other than Dutch are considered relevant in this study, however, they will be included in the discussion. When the Present-day Dutch standard language is discussed, a distinction will sometimes be made between the standard language spoken in the Netherlands and the standard language spoken in Flanders. These will be referred to as the northern variant and the southern variant respectively. Also, since much of the research on verb clusters is based on dialect data, Present-day Dutch dialects will be discussed at length.

1.4 Theoretical framework

Previous accounts of verb clusters can roughly be divided into two categories, both of which will receive attention in this study. On the one hand there are theoretical accounts within the generative framework and its subsequent adaptations which try to explain the variation space within verb clusters by providing derivations for the different verb orders and/or (mostly theory-internal) motivations for verb movement. On the other hand there are more data-oriented accounts that take the variation space for granted, but try to find language-internal or language-external factors influencing the choice between the variants. The literature in the data-oriented tradition primarily focuses on two-verb clusters with an auxiliary and a participle, probably because these have the most internal variation. The formal tradition also includes work on longer verb clusters and clusters with infinitives.

This work is somewhere in between. It fits in the data-oriented tradition in that it offers a relatively theory-neutral account of verb clusters on the basis of quantitative data. On the other hand, it builds on a number of theoretical assumptions with regard to verb clusters which are the result of investigations in the formal tradition. This study moreover takes a broad approach to verb clusters: infinitive as well as participle clusters are investigated, and long as well as short verb clusters will be considered.

1.5 Organisation of this study

Chapter 2 gives a detailed exploration of the concept ‘verb cluster’, building on previous literature. I will show that not all combinations of verbs should actually be defined as ‘a cluster’, and that the clustering properties of verbs (including internal order variation and the occurrence of the IPP-effect) go hand in hand with the degree to which an auxiliary has been grammaticalised.

Chapter 3 provides an outline of the rest of this study, presenting the research questions, the corpora from which the data has been gathered and the method used in order to construct a data set. The following chapters (4-7) each contain a case study in which corpus data is discussed and different aspects of the historical development of verb clusters are presented: verb order in two-verb clusters, verb order in multi-verb clusters, the development of the double modal construction and the development of the IPP-effect.

The last chapter, chapter 8, presents a historical scenario for the development of the Dutch verb cluster, and an outlook towards further research.

Chapter 2 – The Dutch verb cluster: an exploration

2.1 Introduction

Verb clusters are a much-discussed syntactic property of Dutch and other West-Germanic languages and dialects. The notion ‘verb cluster’ is an umbrella term that comprises a variety of syntactic constructions. All of these share the formal characteristic that the main verb is non-finite (infinitive or participle) and functions as the verbal complement of another verb. I have mentioned in the previous chapter some characteristics that makes these verb clusters particularly interesting for syntactic research: a large number of verbs may appear in such clusters; the verbs are usually adjacent, which suggests that they form a tight syntactic unit; the verbs have a shared argument structure; the verbs may display unusual morphosyntax, like the IPP-effect (which we will also explain as the result of this syntactic union); and last but not least, the internal order in verb clusters may vary without any serious implications for the semantics.

Contrary to what might be expected given the relative freedom of the internal order in verb clusters, verb clusters are internally structured. In clusters with more than one auxiliary, the auxiliaries have an internal hierarchy that influences both the morphosyntax and the semantics of the various verbs in the cluster. The internal order of the verbs in the cluster may reflect this underlying hierarchy, but may also deviate from it.

This chapter will give a step-by-step exploration of the issues related to verb clusters, building on secondary literature. It will become clear that the definition of the concept ‘verb cluster’ is closely related to the definition of the concept ‘auxiliary’. We will take into account the hierarchical structure of verb clusters, verb order variation and the IPP-effect. Section 2.2 focuses on Present-day Dutch, section 2.3 discusses verb clusters from a diachronic point of view. This section will show that the development of Dutch verb clusters is connected with the grammaticalisation of Dutch auxiliaries. Section 2.4 discusses some

existing syntactic analyses of (Present-day Dutch) verb clusters. The chapter ends with a conclusion and an outlook to the rest of the dissertation.

2.2 Verb clusters in Present-day Dutch

2.2.1 The notion ‘verb cluster’

The fact that Dutch has clause-final verb clusters especially in subclauses is related to the difference in word order between Dutch subclauses and main clauses. Dutch has traditionally been characterised as an SOV language, because the typical position of the verb is after the object(s) (Koster, 1975). This can be seen most clearly in subclauses, where the verb invariably occurs in the right periphery of the clause (1a). In declarative main clauses, on the other hand, the verb typically occupies the second position. It is generally accepted that there is a movement rule, known as ‘verb second’, that causes the finite verb to be moved out of the clause final position to the complementiser position (C) (e.g. Den Besten 1983), as can be seen in (1b).

- (1a) *dat ik een cursus Spaans volg* (subclause)
 that I a course Spanish follow.1SG
 ‘that I take a course in Spanish’

- (1b) *Ik volg een cursus Spaans* (main clause)
 I follow.1SG a course Spanish
 ‘I take a course in Spanish’

A finite clause always contains at least one main verb (in the example above: *volgen* ‘follow’). The main verb may be combined with an auxiliary verb, for example a modal, perfective or passive verb. If this is the case in a subclause, the auxiliary verb and the main verb ‘cluster’ together in the right periphery of the clause, e.g.

- (2) *dat ik een cursus Spaans wil volgen*
 that I a course Spanish want.1SG follow.INF
 'that I want to take a course in Spanish'

The combination of two auxiliaries with a main verb in one subclause yields a cluster of three verbs. This is illustrated in (3), where two modal verbs and one main verb occur together in a subclause.

- (3) *dat ik een cursus Spaans zou v willen volgen*
 that I a course Spanish should.1SG want.INF follow.INF
 'that I would like to take a course in Spanish'

As illustrated above in (1b) and (1c), the finite verb occupies the second position in main clauses and hence is no longer part of the clause-final cluster. Note, however, that a cluster of verbs may occur in main clauses when there is more than one auxiliary. The reader can verify that (4), the main clause alternative to (2), only has a single verb clause-finally, whereas (5), the main clause alternative to (3) indeed has a cluster of two verbs.

- (4) *Ik wil een cursus Spaans volgen*
 I want.1SG a course Spanish follow.INF
 'I want to take a course in Spanish'
- (5) *ik zou een cursus Spaans willen volgen*
 I should.1SG a course Spanish want.INF follow.INF
 'I would like to take a course in Spanish'

Because of the 'verb second' rule, the finite verb in main clauses does not occur in the right periphery, and hence it is impossible to establish the relative order of the finite verb and the other verb(s) in such clauses. In addition, if a main clause does contain a clause-final verb cluster as in (5), it is different from clusters in subclauses in that it only contains non-finite verbs. With the finite

verb appearing clause-finally together with the other verbs, verb clusters are more frequent and can become longer in subordinate clauses. For these reasons, most of the existing work on verb clusters has focused exclusively on verb cluster phenomena in subclauses (e.g. Schmid 2005, Sapp 2006, Coussé 2008), although some researchers include main clause verb order in their research design (e.g. Dubenion-Smith 2008). As far as verb order is concerned, this dissertation is also limited to the order of verbs in subclauses. For the purpose of this dissertation, then, the notion verb cluster can be defined as follows:

- (6) *Verb cluster*: a combination of a finite verb (which for now I call an auxiliary) and one or more non-finite verbs (one of which is the main verb) appearing together in the right periphery of a subclause.

This definition of verb clusters is more restrictive than some definitions used by other scholars, not only because main clauses are excluded, but also because of the restriction that there should be an 'auxiliary' in the clause. Wurmbrand (2006:227) for example uses the term 'verb cluster' to refer to any construction involving more than one verbal element, also including combinations with verbs that in this study are characterized as lexical verbs or semi-auxiliaries, like *beloven* 'promise' or *weigeren* 'refuse'. As we will see further in this chapter, however, the definition of the concept auxiliary itself is also subject to debate.

Theoretically there seems to be no limit to the number of verbs that may combine with a main verb to form a grammatically correct verb cluster. As many as seven verbs co-occur in (7). Although verb clusters as long as the one in (7) rarely occur in actual language use and may be perceived as odd, they are both semantically and syntactically correct.

- (7) *dat ik hem daar had willen zien durven blijven*
 that I him there had want.IPP see.INF dare.INF stay.INF
staan kijken
 stand.INF watch.INF
 ‘that I would have liked to see him dare to keep standing there watching’

Crucially, verb clusters are not random combinations of an auxiliary and a verb; as we will see further in this chapter, a verb cluster has an internal syntactic and semantic hierarchy.

2.2.2 The notion ‘auxiliary’

The definition of verb clusters given above makes crucial use of the concept ‘auxiliary’. It is therefore important to also define this concept as carefully as possible. This is no easy matter. Not only is this a notoriously unstable category from a diachronic point of view, it is even a particularly elusive concept synchronically. Definitions vary across theoretical frameworks. Throughout this study I will take a rather broad perspective on the notion auxiliary. It will be argued that ‘auxiliary’ is a dynamic rather than a static concept, and that we need a scale rather than a binary opposition to describe it. This perspective will be explained both from a semantic and a syntactic point of view.

Semantically speaking, an auxiliary can be defined as a verb which does not have a full lexical meaning of its own, but adds (grammatical) meaning to a main verb or a verbal complex. While this definition applies to some verbs from a synchronic point of view, it will be problematic for the same verbs in earlier language stages: many diachronic studies have shown that auxiliaries derive historically from full lexical verbs, but have gradually lost lexical content and have become more grammatical. This process has been called grammaticalisation or, more specifically, auxiliation. It has often been shown that different auxiliaries are at different stages in their development. Synchronically speaking, this means that some auxiliaries are more auxiliary-like than others. Modal auxiliaries like *zullen* ‘shall’ and *moeten* ‘must’, for

example, are assumed to be more grammatical in meaning than verbs like *proberen* 'try' and *helpen* 'help', which are therefore often characterised as lexical verbs or semi-auxiliaries.

The semantic property that auxiliaries have grammatical meaning goes hand in hand with a syntactic feature, i.e. that an auxiliary combines with one or more other verbs to form a 'verbal complex', which has one singular argument structure shared by both verbs. Since the combination of the auxiliary and the main verb yields a new clause structure (see also section 2.4 and *passim*), some scholars refer to this process as *clause union* and to auxiliaries as *restructuring verbs*. My assumption in this dissertation is that, if a verb starts to combine with main verbs in such a verbal complex, it starts functioning as an auxiliary. Most auxiliaries, however, still function as a main verb at the same time, which in fact makes them polysemous.

Each auxiliary imposes morphosyntactic restrictions on the form of its verbal complement. The verbal complement may occur either as a bare infinitive or as a past participle. Some scholars also include verbs that take an infinitive with *te* 'to', like *proberen* 'try' in their overview of clustering verbs (e.g. Schmid 2005:10). It will be argued further in this study that constructions of this type, in which the main verb is an infinitive with *te* 'to', generally do not involve clause union. Although these constructions in some cases display properties of verb clusters, they do so to a lesser extent than the constructions with a bare infinitive or a participle which have been illustrated above. For example, the auxiliary and the main verb in such constructions can be adjacent (8a), but (8b) shows that this is not necessarily the case. The fact that a complementiser (*om*) may often be inserted in such clauses supports the assumption that we are in fact dealing with a main verb complemented by a full clausal complement in (8b).

- (8a) *dat hij een huis probeert te kopen*
 that he a house tries to buy
- (8b) *dat hij probeert (om) een huis te kopen*
 that he tries COMP a house to buy
 both: 'that he tries to buy a house'

Auxiliaries are often divided into categories based on the morphosyntactic restrictions they impose on their verbal complement and the kind of meaning they add to the verb (or to the complex of verbs) in their verbal complement. Again, form and meaning go hand in hand. A verb that adds a modal meaning always selects an infinitive. Examples of modal auxiliaries in Dutch are *willen*, *kunnen*, *mogen*, *zullen* and *moeten*¹. Other auxiliaries types of auxiliaries that typically select a bare infinitive are causatives like *doen* 'do' and *laten* 'let', perception verbs like *zien* 'see' and *horen* 'hear' and aspectual auxiliaries like *gaan* 'go' and *blijven* 'stay'. Perfective auxiliaries *hebben* 'have' and *zijn* 'be' on the other hand select a participle. The same goes for the passive auxiliaries *worden* 'become' and *zijn* 'be'. These six categories are illustrated below with an example.

- | | | |
|------|---|------------|
| (9) | <i>dat hij kan schrijven</i>
that he can write.INF
'that he can write' | MOD + INF |
| (10) | <i>dat hij het boek aan Saar laat zien</i>
that he the book to Saar lets see.INF
'that he shows the book to Saar' | CAUS + INF |
| (11) | <i>dat hij haar hoort zingen</i>
that he her hears sing.INF
'that he hears her sing' | PERC + INF |

¹ A special case is the modal verb *hoeven*, which is used only in negative polarity contexts and demands an infinitive with *te*.

- (12) *dat hij gaat eten* ASP + INF
 that he goes eat.INF
 'that he is going to eat/starts eating'
- (13) *dat hij heeft gewerkt* PERF + PTCP
 that he has worked.PTCP
 'that he has worked'
- (14) *dat hij wordt veroordeeld* PASS + PTCP
 that he becomes judged.PTCP
 'that he is (being) judged'

Note that some types, e.g. causatives like *laten* and perception verbs like *zien*, add an extra participant role to the argument structure of the main verb. This is visible when an example like (10), repeated as (15b), is compared to its counterpart with only a main verb in (15a). The argument *aan Saar* 'to Saar' in (15b) is not an internal argument of either the verb *laten* 'let' or *see* 'see', but really of the complex *laten zien*. Note also that the verbal complex *laten zien* is in fact a synonym of Dutch *tonen* 'show'.

- (15a) *dat hij het boek ziet*
 that he the book sees
 'that he sees the book'
- (15b) *dat hij het boek aan Saar laat zien*
 that he the book to Saar lets see.INF
 'that he shows the book to Saar'

In addition to the auxiliary types shown in (9)-(14), there are also verbs that do not really fit into any of these categories, for example *helpen (te)* 'help', *leren (te)* 'learn/teach', *proberen (te)* 'try', *beloven te* 'promise', *lijken te* 'seem' and *blijken te* 'turn out to'. Most of these select a verbal complement preceded by (sometimes optional) *te* 'to'. Some examples are given below.

- (16) *dat de trein vertraging lijkt te hebben*
 that the train delay seems to have
 'that the train seems to be delayed'
- (17) *dat hij mij helpt (om) de zolder op te ruimen /*
 that he me helps COMP the attic up to tidy
de zolder helpt op te ruimen
 the attic helps up to tidy
 both: 'that he helps me to tidy up the attic'
- (18a) *dat ze belooft (om) me een brief te schrijven /*
 that she promises COMP me a letter to write
?me een brief belooft te schrijven
 me a letter promises to write
 both: 'that she promises to write me a letter'
- (18b) *dat het een mooie dag belooft te worden*
 that it a beautiful day promises to become
 'that it promises to become a beautiful day'

Parallel to our earlier assumption, i.e. that *te*-infinitives in Present-day Dutch are indicative of a less cluster-like verbal complex (but rather of a full clausal complement), we will also consider these verbs to be less far advanced in the auxiliation process and therefore less auxiliary-like than the ones with a bare infinitival or a participial complement. Examples (17) and (18) illustrate once again that many of these verbs may either occur adjacent or non-adjacent to the main verb. It is interesting to observe that the construction with *beloven* 'promise' adjacent to the main verb seems more acceptable when this verb is used with an inanimate subject as in (18b), in which case the meaning of the verb is more grammatical and the verb does not have any argument structure of its own. In what follows, I will only discuss such constructions with a *te*-infinitive when they are relevant to our understanding of clusters with bare infinitives and participles.

Note that under the view presented here, the category auxiliary is a subcategory of the category verb. Auxiliaries are verbs with special properties. Some scholars interpret the category auxiliary (Aux) as distinct from the category verb. Within the generative framework it is sometimes assumed that only passive and perfective auxiliaries belong to the category 'Aux', which yields a more narrow set of auxiliaries. For a more detailed overview of the notion auxiliary in different theoretical frameworks, see Heine (1993:3-26). Throughout this dissertation, a wide definition of the concept auxiliary will be used, including all the categories illustrated in examples (9)-(14).

2.2.3 The notion 'syntagm'

The term 'syntagm' has become common in some recent studies on verb clusters in order to refer to different combinations of auxiliary types and main verbs (e.g. Dubenion-Smith 2010, Sapp 2006, 2007). Using this notion offers the possibility of treating several auxiliaries together as one construction, allowing for broader generalisations than would be possible when each auxiliary would be considered separately. Instead of treating each modal verb and its verbal complement as a different construction, they can be treated together as a syntagm: a combination of a modal and an infinitive (MOD+ INF, e.g. (9) above). Other syntagms with two verbs are for instance: a combination of a causative and an infinitive (CAUS + INF, e.g. (10) above), a perfective verb and a past participle, (PERF + PTCP, e.g. (13) above), etc.

It is also customary to categorize different combinations of more than one auxiliary and a main verb as 'syntagms'. Some examples of three-verb syntagms are given below.

- | | | |
|------|--------------------------------------|-----------------|
| (19) | <i>dat hij zal moeten vertrekken</i> | MOD + MOD + INF |
| | that he shall must.INF leave.INF | |
| | 'that he will have to leave' | |

- (20) ... *dat hij kan blijven spelen* MOD + ASP + INF
 that he can stay.INF play.INF
 'that he can continue to play'
- (21) *dat hij moet hebben gezwommen* MOD + PERF + PTCP
 that he must have.INF swum.PTCP
 'that he must have swum'
- (22) *dat hij heeft kunnen werken* PERF + MOD + PTCP
 that he has can.IPP work.INF
 'that he has been able to work'

Observe that the notion syntagm can also be applied to combinations of different auxiliary types in clusters of four and more verbs.

2.2.4 The hierarchical structure of verb clusters

It is assumed in many syntactic studies that the verbal complex is hierarchically structured, with the finite verb as the highest and the main verb as the lowest verb in the hierarchy. When an auxiliary is added to the main verb, the internal hierarchy of the verbs can be made visible by attributing number 1 to the finite verb and 2 to the main verb. (This is obviously not relevant in clauses with a single verb, since in such clauses the finite verb is by definition also the main verb.) From a syntactic point of view, it has been stated that the auxiliary 'selects' the main verb and therefore it can impose morphosyntactic restrictions on it.

- (23) *dat ik een cursus Spaans heb¹ gevolgd²*
 that I a course Spanish have.1SG followed.PTCP
 'that I have taken a course in Spanish'

We saw that the complex of a main verb and an auxiliary can again be combined with another auxiliary, which may happen several times, yielding a long verb

cluster. These longer verb clusters also have an internal hierarchy. Again, the verb that is higher in the hierarchy ‘selects’ each lower verb. The highest verb in the hierarchy (i.e. the finite verb) is attributed number 1, all the following auxiliaries are numbered from 2 to (the main verb) x, where x is the number of verbs in the cluster. The internal hierarchy of a long verb cluster is illustrated stepwise in (24a-f) below.

- (24a) *dat hij daar staat¹ te kijken²*
 that he there stand.3SG to watch.INF
 ‘that he stands there watching’
- (24b) *dat hij daar blijft¹ staan² kijken³*
 that he there stay.3SG stand.INF watch.INF
 ‘that he keeps standing there watching’
- (24c) *dat hij daar durft¹ (te) blijven² staan³ kijken⁴*
 that he there dare.3SG to stay.INF stand.INF watch.INF
 ‘that he dares to keep standing there watching’
- (24d) *dat ik hem zie¹ durven² blijven³ staan⁴ kijken⁵*
 that I him see.1SG dare.INF stay.INF stand.INF watch.INF
 ‘that I see him dare to keep standing there watching’
- (24e) *dat ik hem wil¹ zien² durven³ blijven⁴ staan⁵ kijken⁶*
 that I him want.1SG see.INF dare.INF stay.INF stand.INF watch.INF
 ‘that I want to see him dare to keep standing there watching’
- (24f) *dat ik hem had¹ willen² zien³ durven⁴ blijven⁵ staan⁶ kijken⁷*
 that I him had want.IPP see.INF dare.INF stay.INF stand.INF watch.INF
 ‘that I would have liked to see him dare to keep standing there watching’

The (cluster of) verb(s) that an auxiliary is combined with will be referred to as its *verbal complement*, which is always lower in the syntactic hierarchy than the auxiliary verb itself. The higher verb in the hierarchy is also commonly referred to as the matrix verb or the selecting verb.

Especially in clusters of three and more verbs, visualising the underlying syntactic structure is a useful way of disambiguating between different possible combinations of the same auxiliaries. This becomes clear in the following example. The modal verb *kunnen* in (25a) is in the complement of perfective *hebben*. The hierarchy is reversed in (25b): here, perfective *hebben* is in the complement of modal *kunnen*.

(25a) dat *Simon zijn huis heeft¹ kunnen² verkopen³*
 that Simon his house has.3SG can.IPP sell.INF
 ‘that Simon has been able to sell his house’

(25b) dat *Simon zijn huis kan¹ hebben² verkocht³*
 that Simon his house can.3SG have.INF sold.PTCP
 ‘that Simon may have sold his house/that it is possible that
 Simon has sold his house’

The fact that one verb is in the complement of the other and not the other way around has consequences for the morphosyntax as well as for the semantics of the verb cluster. An important morphosyntactic effect is that the ‘highest’ auxiliary in the clause is usually finite, whereas the rest of the verb cluster is non-finite. The finite verb in (25a) is *heeft* (3sg. of *hebben*, ‘have’). Its verbal complement consists of the two infinitives, of which *kunnen* ‘can’ is the second and *verkopen* ‘sell’ is the third verb in the hierarchy. The finite verb in (25b) on the other hand is *kan* (3sg. of *kunnen*, ‘can’). The modal verb *kunnen* selects an infinitival complement, therefore the second auxiliary *hebben* in (25b) is an infinitive. Since perfective *hebben* in turn selects a past participle complement, the main verb *verkocht* occurs as a past participle.

There is also a semantic difference between (25a) and (25b), which is directly connected to the dissimilarity of the syntactic structures. One of the basic assumptions in this dissertation is that whenever an auxiliary is higher than another verb in the syntactic structure, it has semantic scope over that

verb. Therefore if perfective *hebben* ('have') is above modal *kunnen* ('can') and main verb *verkopen* ('sell') in the syntactic hierarchy, it has scope over the verbal complex *kunnen verkopen* ('can sell'). This complex as a whole receives a perfective interpretation, which entails that the modal event occurs at an already completed point in time. By contrast, the verbal complex *hebben verkocht* ('have sold'), which in itself has perfective meaning, is in the scope of modal *kunnen* ('can') in (25b). A natural reason for a speaker to add modal meaning to a completed event is when s/he wants to make a claim about the truth value of this event being completed. Therefore as a result of its high position in the verb cluster, modal *kunnen* in (25b) gets an epistemic reading, whereas *kunnen* in a low position in the cluster gets a root interpretation (see also Cremers 1983, and chapter 6 of this study).

It appears therefore that verb clusters are more than groups of verbs appearing together: they are hierarchically structured, both morphosyntactically and semantically. The definition given in (6) above may thus be refined as follows:

- (26) *Verb cluster*: a combination of a finite verb (which we have defined as an auxiliary) and one or more non-finite verbs (one of which is the main verb) appearing together in the right periphery of a subclause. These verbs are hierarchically structured as follows: the finite verb is the highest verb in the hierarchy, and the main verb is the lowest. Each verb in the cluster imposes morphosyntactic restrictions on the next verb in the hierarchy, and each verb has semantic scope over all the verbs lower in the cluster.

Note that the semantic hierarchy and the syntactic hierarchy mirror each other. The main verb is the lowest verb in the syntactic hierarchy, yet in terms of semantics and of argument structure it is the core of the verb cluster. The same goes for the auxiliary verbs: when they are lower in the syntactic hierarchy, they are closer to the semantic core of the verbal complex and are therefore

more lexical. The higher they are in the syntactic hierarchy, the more functional they become. This coincides with a wider semantic scope over the other verbs in the cluster. The fact that some auxiliaries are allowed to have wider scope than others will be explained further in this dissertation as an effect of increased grammaticalisation (cf. chapter 6, chapter 7).

In all the examples discussed in this section, the linear order of the verbs in the cluster corresponds to their hierarchical order. The next section shows that this is not necessarily the case: Dutch verb clusters typically have order variation.

2.2.5 Verb order variation

2.2.5.1 Hierarchical and linear order

One of the reasons that verb clusters have received so much attention in the literature on Dutch syntax, is that the same hierarchical relations between auxiliaries and their complements may be expressed by different surface orders. In other words, the linear order of the verb does not necessarily reflect the semantic and syntactic hierarchy of the verb cluster. Crucially, the semantics of the verbal complex remain unaltered when the verb order is changed. This is illustrated in (27).

- (27a) *dat ik een cursus Spaans heb¹ gevolgd²* [1-2]
 that I a course Spanish have.1SG followed.PTCP
- (27b) *dat ik een cursus Spaans gevolgd² heb¹* [2-1]
 that I a course Spanish followed.PTCP have.1SG
 both: 'that I have taken a course in Spanish'

Both variants occur with comparable frequencies in Present-day Dutch and there is no semantic distinction between them.

Order variation also occurs in clusters with three verbs. Three verbs can logically be put in six different orders. Four of these are to a certain extent acceptable in Present-day Standard Dutch, as is illustrated below for the syntagm MOD + PERF + PTCP.

- (28a) *dat Simon zijn huis moet¹ hebben² verkocht³* [1-2-3]
 that Simon his house must.3SG have.INF sold.PTCP
- (28b) *dat Simon zijn huis moet¹ verkocht³ hebben²* [1-3-2]
 that Simon his house must.3SG sold.PTCP have.INF
- (28c) *dat Simon zijn huis verkocht³ moet¹ hebben²* [3-1-2]
 that Simon his house sold.PTCP must.3SG have.INF
- (28d) *dat Simon zijn huis verkocht³ hebben² moet¹* [3-2-1]
 that Simon his house sold.PTCP have.INF must.3SG
 all: 'that Simon must have sold his house'

Note that the variants above have different frequencies and that the acceptability of (28b) and (28d) varies across speakers. The 1-2-3 order and the 3-1-2 order on the other hand are perfectly acceptable to most speakers of Dutch. The two-orders that have not been illustrated above, 2-1-3 and 2-3-1 do not occur in Standard Dutch. As we will see further in this chapter, however, dialects are more permissive of verb order variation than the standard language.

We can conclude from this that, although verb clusters have an internal syntactic and semantic hierarchy, their linear order is, to a certain extent, variable. This linear order may render the syntactic hierarchy from left to right (27a, 28a), from right to left (27b, 28d), or not directly render the syntactic hierarchy (28b, 28c).

2.2.5.2 Terminology

Different linguists use different terminology to refer to the order variants discussed in the previous section. Ever since Pauwels's (1953) dialectological study on verb order, the terms *rode volgorde* 'red order' and *groene volgorde* 'green order' have been in use. Investigating the distribution of the two possible orders in two-verb clusters, Pauwels used red to mark the variant [finite - non-finite verb] and green to mark [non-finite - finite verb] on her dialect maps.

These colours are still used to refer to both order variants, especially in studies on two-verb clusters, e.g. Van der Horst (2000) and Arfs (2007).

Scholars who investigate certain constructions in particular, for example two-verb clusters with a finite verb and a participle, also make use of indications that are specific for that particular construction. Haeseryn (1990) for example uses *vooropplaatsing* or *achteropplaatsing van het deelwoord* ‘preposing or postposting of the participle’. De Sutter (2005) combines the terms *rood* ‘red’ and *groen* ‘green’ with the notations [PART+AUX] (participle + auxiliary) and [AUX+PART]. Coussé (2008) investigates different construction types. She uses the notations [VF-V] and [V-VF], in which V stands for *verbum*, i.e. the main verb and VF for *verbum finitum*, i.e. the finite verb. Depending on whether the main verb is a participle or an infinitive, she also uses notations like [VF-PART] or [VF-INF].

Sometimes the terminology is based on assumptions about the underlying syntactic structure of the verb clusters. It is often assumed that there is one underlying order from which the other orders are derived. Den Besten and Broekhuis (1989) for example assume a deep structure in which the main verb precedes the auxiliary and thus speak of ‘inverted’ and ‘non-inverted’ order. Other studies define the order in terms of branching directionality: when the lower verb occurs to the right of the higher verb as in (27a) above, in other words, when the order is 1-2, the structure is defined as ‘right-branching’, assuming a syntactic tree structure in which the dependent element is a side branch that occurs to the right of the main branch. If the lower verb occurs to the left of the higher verb (2-1) as in (27b), the structure is defined as ‘left-branching’. For more details on these theoretical assumptions, see section 2.4 further in this chapter.

Many studies of three-verb clusters (e.g. Stroop 1970, De Schutter 1995, Zwart 1996, Barbiers 2005b) and some studies on two-verb clusters (e.g. Cornips and Ribbert 2006) use a system with number indices to refer to the different verb orders. The reason that this system is used more often in the literature on three-verb clusters than in work on two-verb clusters is obvious:

two verbs can only be put in two different orders, which are easily referred to with names (e.g. Aux-V and V-Aux), or even colours. With three or more verbs, on the other hand, the number of possible variants increases drastically. Not only does the number system offer a clear way to distinguish all the possible variants, it also provides insight into the hierarchical structure of the verb cluster. There is the added advantage that this system is not construction-specific: it can be used for clusters with infinitives as well as participles and it allows for a unified treatment of short as well as long verb clusters. This is why the number system will be used throughout this study for all the verbs in text examples, in two-verb clusters as well as in longer clusters.

2.2.5.3 Dutch vs. other Germanic languages

Although the focus in this study is on Dutch, it is important to mention that verb cluster phenomena and the corresponding order variation are not restricted to Dutch. Other West-Germanic languages like German, Afrikaans and Yiddish have verb clusters and verb order variation as well. Quite strikingly, Hungarian has similar phenomena. It has been compared to the West-Germanic languages in this respect, e.g. Kiss and Van Riemsdijk (2004).

Present-day Standard German has rigid 2-1 order in two-verb clusters, but longer verb clusters often have variable verb order. German dialects and varieties like Swiss German are comparable to Dutch dialects in that they also exhibit a great deal of variation, especially in clusters of three or more verbs (e.g. Wurmbbrand 2004, 2006). It is worth noting that, within the Germanic family, verb cluster phenomena are restricted to those Germanic languages that are considered to be OV languages, i.e. languages in which objects and other non-verbal complements typically occur before the verb. Verb cluster phenomena are systematically absent from Germanic VO languages like English and the Scandinavian languages. It seems that verb final word order is a prerequisite for clustering phenomena and verb order variation to occur.

The following sections discuss findings from previous empirical studies of Dutch verb order, many of which discuss factors that may influence the

choice between verb order patterns. Some of these factors have also been investigated for Standard German and German dialects. For a complete overview of empirical literature on German, the reader is referred to Sapp (2006).

2.2.5.4 Order variation in two-verb clusters

The optional reordering in Dutch verb clusters poses a challenge to theories of grammar. The choice between the 1-2 order and the 2-1 order is essentially free, at least in two-verb syntagms with a passive or perfective auxiliary and a participle. Such 'free' variation between two alternative word orders in the same context is rare. Word order variation often has a semantic or a pragmatic impact. An example is the preposing of the direct object in Dutch, which may add focus to the object:

(29a) Ik heb de keuken gepoetst

I have the kitchen cleaned.PTCP

'I have cleaned the kitchen'

(29b) De keuken heb ik gepoetst

the kitchen have I cleaned.PTCP

'the kitchen I have cleaned' (but not the living room)

Such a semantic or pragmatic motivation is lacking for the variation found in two-verb clusters. Previous literature has revealed a number of factors, however, which do affect the speaker's choice for either the 1-2 or the 2- order, even if these preferences are statistical rather than absolute. I will briefly discuss some findings from previous studies in this section.

Both language-internal and language-external factors may influence verb order. A language-internal factor that has often been studied is the type of the auxiliary or, put differently, the syntagm. Generalisations often relate to the morphosyntax of the verb that is selected by the auxiliary: many studies show that the distribution between the 1-2 order and the 2-1 order is more or less

equal in the two syntagms that have a finite verb and a participle, i.e. perfective and passive constructions. Verb clusters with a finite verb and a bare infinitive on the other hand have dominant 1-2 order (e.g. Pauwels 1957, Stroop 1970, Haeseryn 1990).² Investigating different syntagms in which the auxiliary is complemented by a bare infinitive, Stroop (1970) finds that the 2-1 order is more common in syntagms with a modal auxiliary than in syntagms with other auxiliaries like causative *laten* 'let' or aspectual *komen* 'come'.

Some studies (e.g. Stroop 1970, Barbiers et al 2008) mention that verbs with a complement introduced by the infinitive marker *te* 'to', do not display variation between the 2-1 and the 1-2 order. The verbal complement in such constructions invariably follows the selecting verb, so they can be said to have 1-2 order. As mentioned above, however, these constructions are rather different from other verb clusters and are considered to be less cluster-like. The fact that they do not display order variation, in Standard Dutch nor in the dialects, supports this assumption.

It is remarkable that the majority of studies of two-verb clusters focuses on clusters with a finite verb and a participle (i.e., perfective and passive constructions), rather than on other cluster types. This is most likely due to the fact that of all the two-verb syntagms, those with a participle display the most variation in Present-day Dutch. The choice between the 1-2 order and the 2-1 order seems to be truly optional in such clusters. Even though some studies reveal language-internal factors that favour one of the two orders, the preferences are always statistical rather than absolute.

One of these language-internal factors is the morphosyntactic context of the verb cluster, i.e., the constituents surrounding the cluster. Studies like De Schutter (1964, 1976, 1996, 2005), De Sutter (2005) and Arfs (2007) for example have found that the use of the 1-2 order is promoted if certain elements occur in front of the verb cluster. These are elements that are

² Clusters with a *te*-infinitive are mostly not included in such studies, since there is no order variation in such clusters; the *te*-infinitive invariably follows its matrix verb (1-2).

semantically close to the main verb, like particles, non-nominal complements and indefinite nominal arguments. The preference for the 1-2 order in these cases indicates – perhaps surprisingly – that such elements, even though they are semantically close to the main verb, are preferably separated from the main verb (the participle) by the auxiliary. Extraposed prepositional objects or adjuncts on the other hand are found to have a favouring effect on the 2-1 order.

Another language-internal factor that correlates with verb order variation is prosody. Studies by Haeseryn (1990), De Schutter (1996), Swerts (1998), De Sutter (2005) and Arfs (2007) show that a stressed element directly preceding a two-verb cluster with a participle favours 1-2 order. For instance, the use of the stressed direct object *traangas* directly preceding the verb cluster in example (30) below is said to promote the use of the 1-2 order.

- (30) *In de krant staat dat de politie bij de actie traangas*
 in the newspaper stands that the police at the action tear-gas
heeft¹ gebruikt²
 has used
 ‘The newspaper says the police has used tear gas at the protest’
 (Arfs 2007:69)

Also, clauses with a long middle field (i.e. with many words occurring between the complementiser and the verb cluster) have more 1-2 order than clauses with a short middle field. These effects have been explained as the result of an avoidance of accent clashes. However, as Coussé (2008) also notes, it is debatable whether it is the accent pattern that influences word order or the other way round. De Sutter (2005) shows that prosodic effects are not significant if they are analysed independently of discourse effects, suggesting that it is indeed not prosody itself that affects verb order, but rather discourse influences both verb order and stress patterns.

The most discussed language-external variable is probably 'dialect'. Work on the geographical distribution of the red and the green order includes Van den Berg (1949), Pauwels (1953), Stroop (1970), Gerritsen (1991), De Sutter (2005), De Sutter, Speelman & Geeraerts (2005) and Barbiers et al (2008). The generalizations emerging from these dialectological studies show different tendencies for clusters with an auxiliary and a main verb infinitive, e.g. MOD + INF (see figure 2.1 below) and clusters with an auxiliary and a main verb participle, e.g. PERF + PTCP (see figure 2.2 below). Both cluster types are illustrated with a dialect map from the SAND Atlas below. The 1-2 order is indicated with green dots, the 2-1 order with red dots.

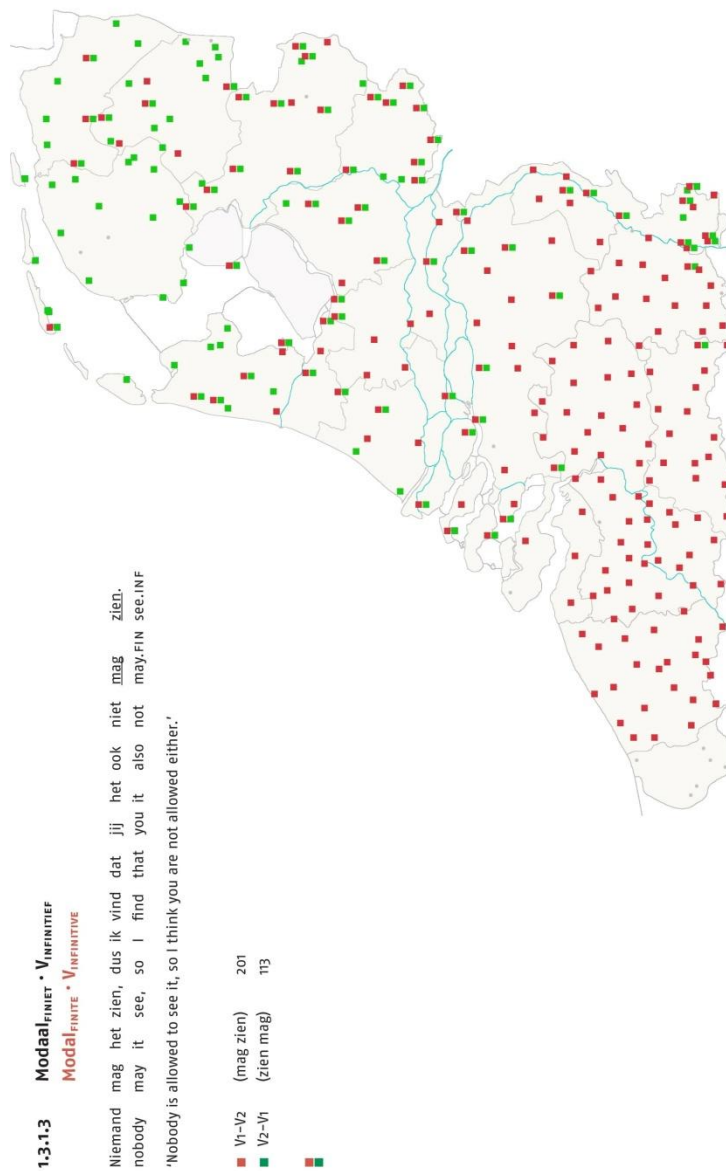


Fig 2.1: dialect map MOD-INF, taken from Barbiers et al (2008: map 15b),
Meertens Kaartenbank (www.meertenskaartenbank.nl).

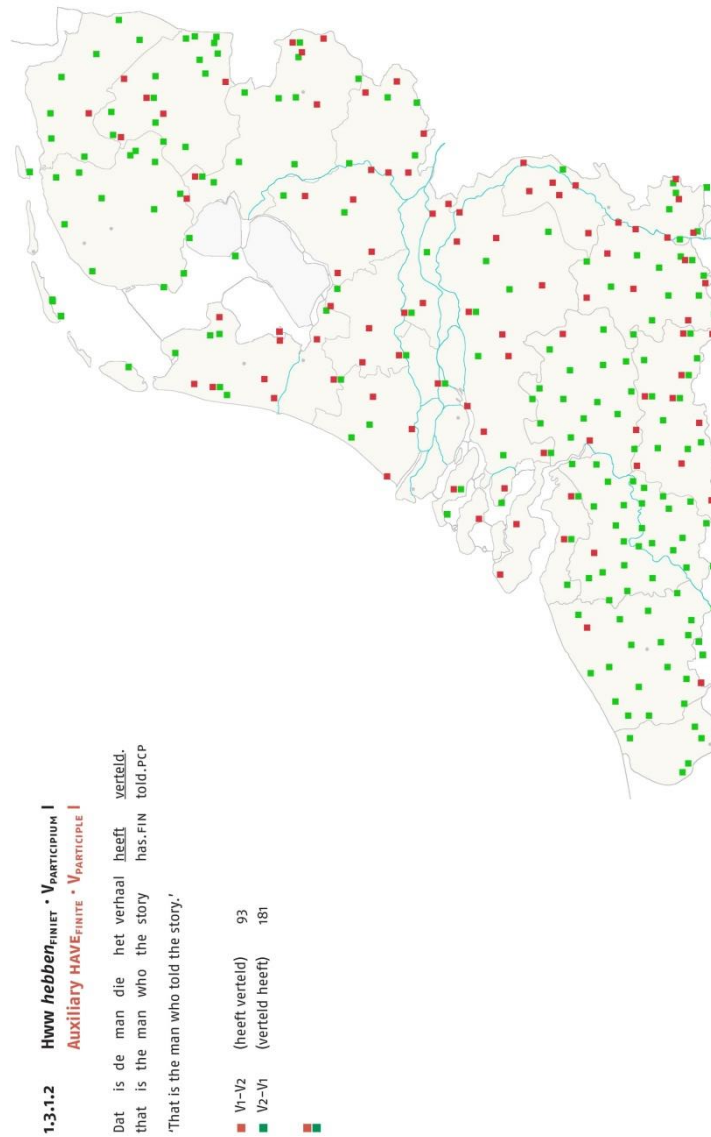


Fig 2.2: dialect map PERF-PTCP, taken from Barbiers et al (2008: map 14b),
 Meertens Kaartenbank (www.meertenskaartenbank.nl).

As Figures 2.1 and 2.2 show, Dutch speakers from the northern provinces of the Netherlands (Groningen, Drenthe, Friesland) area almost exclusively use the 2-1 order in both cluster types. The 1-2 order is prevalent in the centre of the Dutch-speaking area. Flemish speakers of Dutch prefer the 2-1 order in syntagms with a participle and the 1-2 in syntagms with an infinitive.

Other language-external factors that have been investigated are genre and register. Sassen (1963) found that the 1-2 order is dominant in official, scientific and journalistic texts. Sassen considers the 2-1 order to be the 'endogenous' register of most Dutch speakers, i.e. the variant that they would use in their every-day speech. Sassen therefore explains the predominance of the 1-2 order in formal genres in terms of a tendency to use 'exogenous' constructions in such genres. Stroop (1970) attributes the predominance of the 1-2 order in written texts to the fact that Dutch journalists and editors are told to avoid the 2-1 order because it is considered to be a germanism (see also Van den Berg 1949, Stroobants 1997). De Sutter (2005), investigating the effect of register on verb order in participle clusters, has found that the 1-2 order becomes more dominant as texts receive more editing. This obviously raises the question to what extent corpus data represent the actual language preferences of the writer and what the influence is of editors and/or prescriptive rules.

An integrated account of both language-external and language-internal factors is De Sutter (2005). This study contains a multivariate statistical analysis of different factors. On the basis of these findings, De Sutter et al (2007) suggest that verb order in two-verb clusters with a participle is best explained by information structure; 1-2 order becomes more dominant as the context to the left of the verb cluster contains more (new) information. De Sutter et al. (2007) argue that the effect of prosody may also be related to this discourse factor: highly informative constituents are often stressed, which could explain the observed correlation between preceding stressed constituents and 1-2 verb order. De Sutter (2007) also provides an explanation for the finding that the 1-2 order is found more often if the context to the left of

the cluster is highly informative: he claims that such a context allows the hearer to make more accurate predictions about the nature of the main verb, which results in a lower processing cost of the verb cluster, which in turn correlates with the 1-2 verb order. So far, no satisfactory explanation has been proposed for why the 1-2 order should correlate with a low processing cost.

2.2.5.5 Order variation in three-verb clusters

Dutch three-verb clusters have received less attention in the literature than two-verb clusters. The studies that are available tend to describe the existing variation in three-verb syntagms rather than investigate factors that influence this variation. Two factors that have been investigated, however, are the language-internal factor ‘syntagm’ and the language-external factor ‘dialect’.³ Since these two factors interact with each other, they will be discussed together in this section.

De Schutter (2000), discussing some previous dialectological studies of different three-verb syntagms, shows that dialects are more permissive of verb order variation than the standard language. He reports that of the six theoretically possible orders, only one does not occur in any dialect. These findings are confirmed by the extensive dialect syntax research reported in the second volume of the Dutch Atlas of Syntactic Dialects (SAND, Barbiers et al. 2008). Generally speaking, northern dialects have a preference for the strictly left-branching 3-2-1 order, whereas other dialects have 1-2-3 or ‘mixed’ orders. These findings seem to correspond with the dialect preferences in two-verb clusters as discussed in the previous section, i.e. northern dialects strictly prefer the 2-1 order, as opposed to other dialects which have 1-2 order or variation between the two orders.

³ An additional factor that has been studied in literature on Present-day German and its dialects, is the influence of information structure on verb order in three verb clusters (e.g. Schmid and Vogel 2004, Schmid 2005, Dubenion-Smith 2010). These scholars have shown that focus on one of the verbs in a three-verb cluster may affect its internal order.

The variation space in three-verb clusters depends heavily on the auxiliaries and syntagms involved. The remainder of this section is a summary of the existing ordering patterns in three different syntagms investigated in the SAND Atlas (Barbiers et al 2008), which have been discussed in Barbiers (2005b) and Barbiers and Bennis (2010): the double modal syntagm (MOD-MOD-INF), the syntagm with a modal auxiliary, a perfective auxiliary and a participle (MOD-PERF-PTCP) and the syntagm with a perfective auxiliary, an aspectual auxiliary and a main verb (PERF-ASP-INF). Verb order patterns that are acceptable in (some) dialects but not in Standard Dutch are marked with a #, verb order patterns that are not attested in any variety are marked with an asterisk.

Clusters with two infinitives, like the syntagm with two modal auxiliaries (MOD-MOD-INF), have the least variation, in Standard Dutch as well as in the dialects. The six theoretically possible orders in this syntagm are rendered in (31a-f), including their acceptability in Standard Dutch and Dutch dialects.

- (31a) ...*dat hij moet¹ kunnen² zwemmen³*
 that he must.3SG can.INF swim.INF
- (31b) #... *dat hij moet¹ zwemmen³ kunnen²*
 that he must.3SG swim.INF can.INF
- (31c) *... *dat hij kunnen² moet¹ zwemmen³*
 that he can.INF must.3SG swim.INF
- (31d) *... *dat hij kunnen² zwemmen³ moet¹*
 that he can.INF swim.INF must.3SG
- (31e) #... *dat hij zwemmen³ moet¹ kunnen²*
 that he swim.INF must.3SG can.INF
- (31f) #... *dat hij zwemmen³ kunnen² moet¹*
 that he swim.INF can.INF must.3SG
 all: 'that he must be able to swim'

In Standard Dutch, the 1-2-3 order as in (31a) is virtually the only option for this syntagm (cf. Haeseryn et al 1997:1072). The distribution of verb orders in Dutch dialects is visible in Fig 2.3.

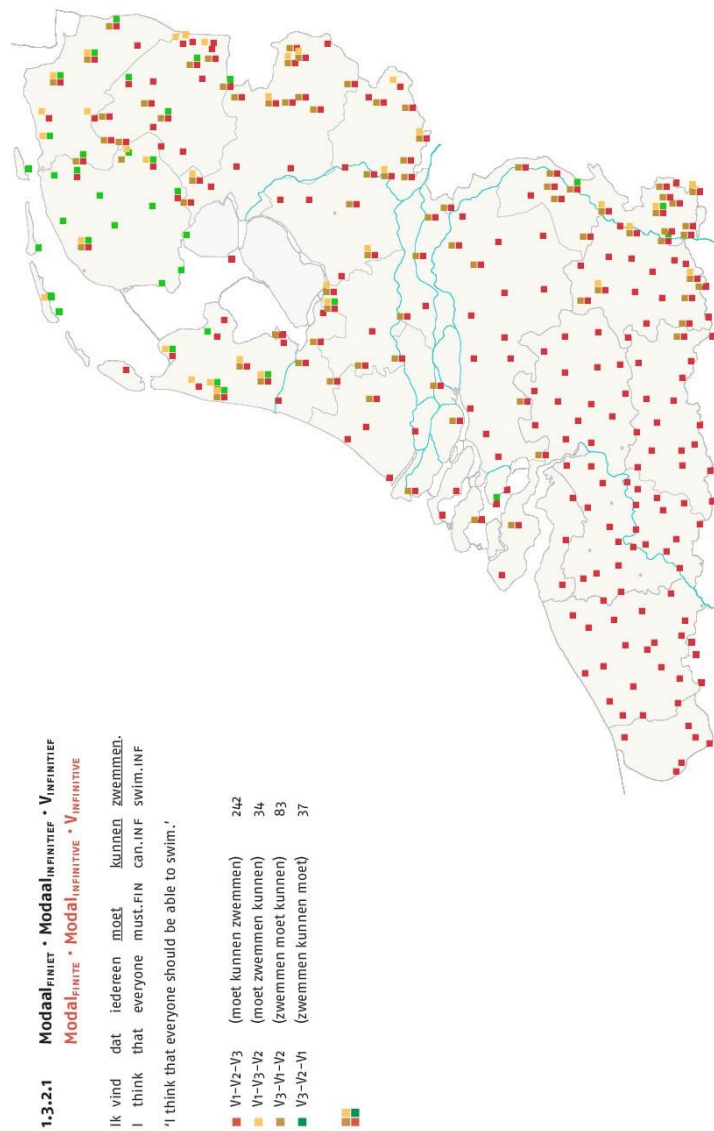


Fig 2.3: dialect map MOD-MOD-INF, taken from Barbiers et al (2008: map 17a),
 Meertens Kaartenbank (www.meertenskaartenbank.nl).

The dialect map in 2.3 shows that the 1-2-3 order, which is common in Standard Dutch, is also by far the most widespread order in Dutch dialects. It occurs in the whole Dutch language area except in the Frisian dialects, which exclusively have 3-2-1 as in (31f). The 3-2-1 order is also attested in dialects from the north of Holland and the northern provinces of Groningen and Drenthe. However, it is always an option that exists next to other orders. The 1-3-2 order as in (31b) has also been found for this syntagm. This order occurs sporadically in the northern half of the Netherlands (to the north of the line Arnhem-IJmuiden), and sporadically in Limburg. For none of these dialects is the 1-3-2 order the only existing option. The order 3-1-2 as in (31e), finally, occurs quite frequently in the dialects of the Netherlands, again always next to other orders. The orders 2-1-3 and 2-3-1 do not occur.

A second syntagm that has been investigated in the SAND atlas is the syntagm with a modal auxiliary, a perfective auxiliary and a participle (MOD-PERF-PTCP). These are the six theoretical options including their acceptability in Standard Dutch and its dialects:

- (32a) ... *dat hij het moet¹ hebben² gemaakt³*
 that he it must.3SG have.INF made.PTCP
- (32b) ... *dat hij het moet¹ gemaakt³ hebben²*
 that he it must.3SG made.PTCP have.INF
- (32c) *... *dat hij het hebben² moet¹ gemaakt³*
 that he it have.INF must.3SG made.PTCP
- (32d) *... *dat hij het hebben² gemaakt³ moet¹*
 that he it have.INF made.PTCP must.3SG
- (32e) ... *dat hij het gemaakt³ moet¹ hebben²*
 that he it made.PTCP must.3SG have.INF
- (32f) #... *dat hij het gemaakt³ hebben² moet¹*
 that he it made.PTCP have.INF must.3SG
 all: 'that he must have made it'

Two of these are perfectly acceptable in Standard Dutch, i.e. 1-2-3 (32a) and 3-1-2 (32e). Flemish speakers of Standard Dutch also use 1-3-2 (32b). In other words, the order of the finite verb and the infinitive *hebben* in Standard Dutch is fixed (1-2), and the participle may be placed before, after or between the other two verbs.

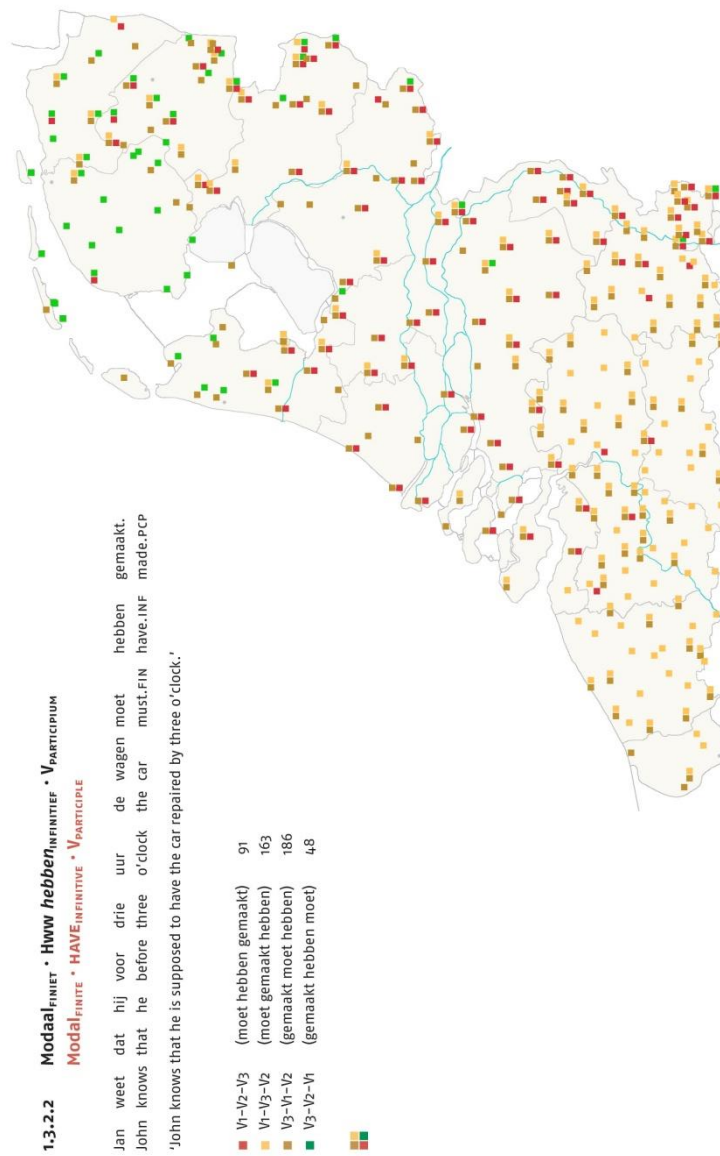


Fig 2.4: dialect map MOD-PERF-PTCP, taken from Barbiers et al (2008: map 17b),
 Meertens Kaartenbank (www.meertenskaartenbank.nl).

The same three options (1-2-3, 1-3-2 and 3-1-2) exist in the dialects, as Fig 2.4 shows. The 1-3-2 order occurs most in southern (Belgian) dialects, but is also attested sporadically in the dialects of the Netherlands. In addition, the 3-2-1 order (32f) is attested with reasonable frequency. This is again the preferred order in northern dialects. As with the previous syntagm MOD-MOD-INF, 2-1-3 and 2-3-1 are not attested in clusters of the MOD-PERF-PTCP type.

A third syntagm that has been examined in the SAND is a combination of a perfective auxiliary, an aspectual auxiliary and a main verb (PERF-ASP-INF). This syntagm in many dialects displays the IPP-effect, i.e. the verbal complement of the perfective verb *zijn* 'be' occurs as in infinitive *gaan* 'go' instead of a participle *gegaan* 'gone'. Again, the six logically possible orders are given in (33a-f). Standard Dutch allows only one order for this syntagm: 1-2-3 (33a).

- (33a) *dat hij is¹ gaan² zwemmen³*
 that he is go.IPP swim.INF
- (33b) *#dat hij is¹ zwemmen³ gaan² / gegaan²*
 that he is swim.INF go.IPP gone.PTCP
- (33c) **dat hij gaan² / gegaan² is¹ zwemmen³*
 that he go.IPP is swim.INF
- (33d) *#dat hij gaan² zwemmen³ is¹*
 that he go.IPP swim.INF is
- (33e) **dat hij zwemmen³ is¹ gaan² / gegaan²*
 that he swim.INF is go.IPP gone.PTCP
- (33f) *#dat hij zwemmen³ gegaan² is¹*
 that he swim.INF gone.PTCP is
 all: 'that he has gone swimming'

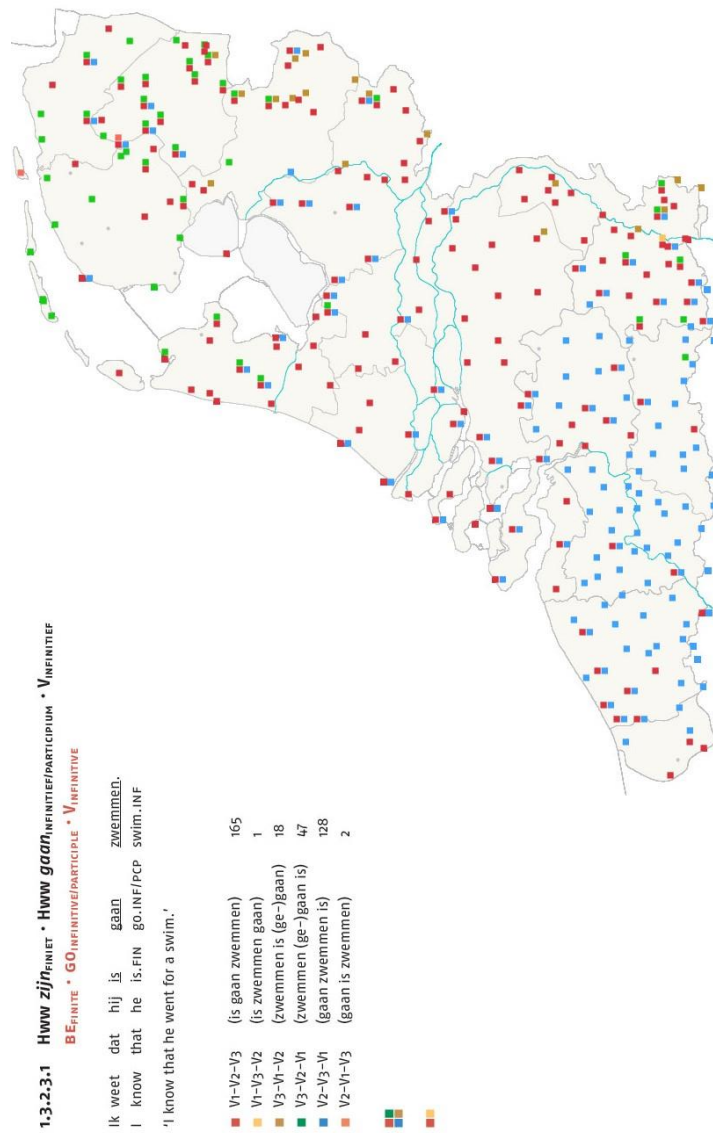


Fig. 2.5: dialect map PERF-ASP-INF, taken from Barbiers et al (2008: map 18), Meertens Kaartenbank (www.meertenskaartenbank.nl).

Figure 2.5 shows that Dutch dialects, as opposed to the Standard language, allow for five out of the six theoretically possible orders in this syntagm. The ‘Standard Dutch’ 1-2-3 order is the most frequent variant in Dutch dialects. The 3-2-1 order as in (33f) is again quite frequent in the northern dialects and, interestingly, correlates with absence of the IPP-effect. In southern dialects on the other hand the order 2-3-1 as in (33d) is dominant in this cluster type. This is quite surprising since the 2-3-1 order is not attested in the other two syntagms. Other research confirms that the 2-3-1 order is limited to syntagms with a perfective verb as the highest auxiliary. The 3-1-2 order is attested for this syntagm in the east of the Dutch-speaking area. The 1-3-2 order (33b), finally, is only attested once in the SAND data, but Barbiers and Bennis (2010:30) argue that this is a consequence of the methodology and assume on the basis of other data that this order is also possible for this cluster type.

The findings in the SAND Atlas and other dialect studies are summarised in Table 2.1 below. A ‘V’ means that the order is found in (some) dialects, a bold ‘V’ means that it is also acceptable in Standard Dutch.

Syntagm	Orders attested					
	1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1
MOD-MOD-INF	V	V			V	V
MOD-PERF-PTCP	V	V			V	V
PERF-ASP-INF	V	V		V		V

Table 2.1: verb order in three-verb clusters as attested in Dutch dialects

Looking at the dialect data from three different syntagms, the following generalisations arise:

- i. The 1-2-3 order is attested in all the three syntagms. It is the most frequent order in Dutch dialects for two of the three investigated syntagms.

- ii. The 1-3-2 order is attested in all the three syntagms, but is never the only option.
- iii. The 2-1-3 order is not attested.
- iv. The 2-3-1 order is limited to syntagms with a perfective verb as the highest auxiliary, e.g. PERF-MOD-INF
- v. The 3-1-2 order occurs in two syntagms: MOD-MOD-INF and MOD-PERF-PTCP
- vi. The 3-2-1 order is typical for the northern dialects, regardless of the syntagm. In the MOD-MOD-INF syntagm, however, it is less frequent than the 1-2-3 order even in the northern dialects.

These findings are to a large extent in line with the tendencies witnessed in two-verb clusters: bare infinitives in most dialects follow their matrix verb, hence the dominant 1-2-3 order in MOD-MOD-INF. Participles may precede or follow the matrix verb, hence the orders 1-2-3, 1-3-2 and 3-1-2 in the MOD-PERF-PTCP syntagm. The 2-3-1 order in the PERF-ASP-INF syntagm (31d) seems to represent a mixed system in which the internal order of the aspectual verb and its infinitival complement is 1-2, while these two verbs as a whole occur to the left of the perfective matrix verb and thus behave as a complex participle. Therefore it seems no accident that this order is attested only in southern dialects, which indeed have a mixed system: 1-2 order is predominant in infinitive clusters and 2-1 order is predominant in participle clusters in these dialects (see also Stroop 1970, De Schutter 1995).

Note that clusters with a *te*-infinitive as in (32) are an apparent contradiction to generalisation (iii), i.e., that the 2-1-3 order is not attested in any syntagm in any dialect. This is another indication that constructions with *te*-infinitives are less cluster-like than the other three-verb syntagms discussed in this section. Such apparent instances with 2-1-3 order should actually be analysed as left-branching two-verb clusters with an extraposed (clausal) *te*-infinitive, hence the superscribed index 3 between brackets.

- (34) *dat hij het huis geprobeerd² heeft¹ te verkopen⁽³⁾*
 that he the house tried has to sell
 ‘that he has tried to sell the house’

The theoretical implications of these generalisations will be discussed further in this chapter. It will be shown that the unacceptability of 2-1-3 can be explained on the grounds of the hierarchical structure of the cluster. Also, the 3-1-2 order and the 1-3-2 order may be accounted for by stipulating that the main verb (3) in such clusters behaves like a non-verbal complement and therefore may occur before or between the other two verbs (Barbiers and Bennis 2010).

2.2.5.6 Order variation in longer verb clusters

Clusters with more than three verbs show little variation in Present-day Dutch. These clusters typically consist of a series of infinitives, the linear order of which reflects the hierarchical order. The syntactic hierarchy is invariably from left to right, i.e. 1-2-3-4 etc.

- (35) *dat je je haar zou¹ kunnen² laten³ verven⁴*
 that you your hair should can.INF let.inf dye.INF
 MOD-MOD-CAUS-INF
 ‘that you could have your hair dyed’
- (36) *dat hij het had¹ moeten² kunnen³ zien⁴ gebeuren⁵*
 that he it had must.INF can.INF see.INF happen.INF
 PERF-MOD-MOD-PERC-INF
 ‘that he should have been able to see it happen’

Exceptions to this generalisation are clusters with a participle as the most deeply embedded verb (cf. Haeseryn et al 1997:1071). In such clusters the linear order 1-2-3-4 is still possible (37a), but the participle can also precede

the other verbs (4-1-2-3) as in (37b), occur between the first and the second verb (1-4-2-3) as in (37c) or between the second and the third verb (1-2-4-3) as in (37d). The last two options are more acceptable in southern Standard Dutch than in northern Standard Dutch.

- (37a) *dat de pogingen zullen¹ moeten² worden³ gestaakt⁴*
 that the efforts shall must.INF become.INF ceased.PTCP
- (37b) *dat de pogingen gestaakt⁴ zullen¹ moeten² worden³*
 that the efforts ceased.PTCP shall must.INF become.INF
- (37c) *dat de pogingen zullen¹ gestaakt⁴ moeten² worden³*
 that the efforts shall ceased.PTCP must.INF become.INF
- (37d) *dat de pogingen zullen¹ moeten² gestaakt⁴ worden³*
 that the efforts shall must.INF ceased.PTCP become.INF
 all: 'that the efforts will have to be ceased'

The diachronic data presented in chapter 5 will demonstrate that the ordering patterns in long verb clusters are actually quite stable diachronically. Clusters of four or more verbs in Late Middle Dutch had the same ordering options as they do in Present-day Dutch. I will argue that both in Middle Dutch and in Present-day Dutch dialects, orders directly reflecting the internal hierarchy are favoured in long verb clusters because verb order becomes more important as a cue in determining the hierarchy between the verbs in long clusters. Participles on the other hand can be put anywhere in this linear order because their overt morphology betrays their function in the verb cluster. If a verb appears as a participle in Present-day Dutch it is always the most deeply embedded verb in the cluster, and its morphological marking allows it to be unambiguously interpreted as such (see also Hoeksema 1988). It will also be argued that the tendency to reflect the linear order from left to right (and not vice versa) in such long verb clusters can be explained by a preference to put the finite verb first, which in turn has to do with a lower production and processing cost.

2.2.5.7 Cluster interruption

As the previous sections have shown, the verbs in a Standard Dutch verb cluster are typically adjacent to each other. There are Dutch dialects, however, that allow some non-verbal material between the verbs in a cluster. This phenomenon is geographically limited in Present-day Dutch, although it seems to have been more widespread in earlier stages of Dutch (e.g. Hoeksema 1994, Van der Horst 1998). Today it is quite common in the southern dialects spoken in Belgium, and especially in West-Flanders (e.g. Haegeman 1992). It will henceforth be referred to as ‘cluster interruption’.

Within the dialects that display cluster interruption, there is variation along several dimensions: according to the type of intervening material (from particle to full NP), according to the frequency of the phenomenon and according to the number of constituents that can intervene between the verbs. Interestingly, this occurs only in clusters that have 1-2 order. The order in interrupted clusters is thus 1-X-2 rather than 2-X-1. Three examples are given below.

- (38) ... *dat hij de borden zal afdrogen*
 that he the plates will off-dry
 ‘that he will dry the plates’
- (39) *dat hij morgen moet¹ vroeg opstaan²*
 that he tomorrow must early get-up.INF
 ‘that he must get up early tomorrow’
- (40) *dat hij zou¹ willen² boeken lezen³*
 that he should want.INF books read.INF
 ‘that he would like to read a book’

A special case of cluster interruption can be observed in the verb-particle combination, e.g. *af-drogen*, lit. off-dry ‘dry up’ (with a towel)’ as in (38). Such particles often remain untranslated in English and are found interrupting the verb cluster in all the Present-day Dutch dialects including Standard Dutch.

Other elements that are often found interrupting the cluster are generally: short elements rather than long elements (e.g. (39)); indefinite (bare) nominals rather than definite nominals (e.g. (40)), and elements that are semantically close to the main verb (e.g. both (39) and (40)). For a comprehensive overview of the variation in Dutch dialects, the reader is referred to the SAND Atlas (Barbiers et al 2008:34-37)⁴.

Even though many southern Dutch dialects do allow non-verbal material between the verbs, to my knowledge there is no Dutch dialect or any other West-Germanic dialect that exclusively has interrupted clusters. Investigators of the corpus of spoken Dutch have shown that only in 8% of the ‘southern Dutch’ verb clusters there is actual non-verbal material interrupting the verbs (Van der Wouden et al 2002). They conclude that cluster interruption is an optional word order in these dialects that exists next to the ‘regular’ non-interrupted cluster.

In this study, we will only concern ourselves with the phenomenon of cluster interruption insofar as it provides insights that are relevant to our discussion of the much more frequent uninterrupted clusters. An extensive survey of the phenomenon of cluster interruption on the basis of synchronic and diachronic data is a topic that lies outside the scope of this study, although it certainly deserves further research.

2.2.6 The IPP-effect

Dutch verb clusters are of interest to linguists not only because of their order variation. This section discusses another property of Dutch verb clusters that has received much attention in the literature: the IPP-effect. This feature is illustrated with Present-day Dutch examples in (41a-h).

⁴ The page references to the Syntactic Atlas of Dutch Dialects (SAND) refer to the comments volume, not to the maps volume.

- (41a) *dat hij het huis heeft¹ **laten**² verbouwen³* PERF-CAUS-INF
 that he the house has let.IPP rebuild
 ‘that he has let (someone) rebuild the house’
- (41b) *dat hij het huis heeft¹ **kunnen**² verbouwen³* PERF-MOD-INF
 that he the house has can.IPP rebuild
 ‘that he has been able to rebuild the house’
- (41c) *dat hij het huis heeft¹ **horen**² verbouwen³* PERF-PERC-INF
 that he the house has hear.IPP rebuild
 ‘that he has heard (someone) rebuild the house’
- (41d) *dat hij het huis heeft¹ **helpen**² verbouwen³* PERF-BEN-INF
 that he the house has help.IPP rebuild
 ‘that he has helped (someone) rebuild the house’
- (41e) *dat hij is¹ **blijven**² verbouwen³* PERF-ASP-INF
 that he is stay.IPP rebuild
 ‘that he has kept on rebuilding’
- (41f) *dat hij het huis was¹ **beginnen**² te verbouwen³* PERF-ASP-INF
 that he the house was begin.IPP rebuild
 ‘that he has begun to rebuild the house’
- (41g) *dat hij het huis heeft¹ **proberen**² (te) verbouwen³* PERF-CONT-INF
 that he the house has try.IPP to rebuild
 ‘that he has tried to rebuild the house’
- (41h) *dat hij de hele dag had¹ **lopen**² (te) werken³* PERF-ASP-INF
 that he the whole day had walk.IPP to work
 ‘that he had been working in the house all day’

What all the examples above have in common is the unexpected form of the middle verb in the three-verb cluster. As this second verb is in the complement of perfective auxiliary *hebben* ‘have’ or *zijn* ‘be’, we would expect it to occur as a past participle. However, it takes the form of an infinitive instead, hence the term *Infinitivus Pro Participio* (IPP). The phenomenon has also been called

Erzatzinfinitiv (e.g. Askedal 1991) or *Double Infinitive Construction* (DIC) (e.g. Den Besten and Edmondson 1983).

The IPP-effect exclusively ‘affects’ verbs that take an infinitival complement. It never occurs when the same verb is used as a lexical verb, i.e. without an infinitival complement, as in the examples below.

(42) *dat hij het heeft gekund* / **kunnen*

that he it has could.PTCP can.INF

‘that he has been able (to do it)’

(43) *dat hij is gebleven* / **blijven*

that he is stayed.PTCP stay.INF

‘that he has stayed’

More specifically, the IPP-effect occurs when a verb and its infinitival complement occur together in the perfect or the pluperfect. Quite importantly, this entails that the IPP-effect very often occurs on the types of verbs that are considered to be ‘auxiliaries’ in this study. Schmid (2005) distinguishes the following categories: causatives (41a), modals (41b), perception verbs (41c), benefactives (41d), duratives (41e), inchoatives (41f) and control verbs (41g). The last category is little more than a cover term for all the remaining verbs that are attested with IPP, like *proberen* ‘try’, *durven* ‘dare’ and *beloven* ‘promise’. Some of these IPP-verbs normally occur with *te*, like *lopen* and *proberen*, but occur without this infinitival marker when they feature in longer verb clusters with IPP. This indicates that, if anything, they become more auxiliary-like when they occur in a construction with IPP. Furthermore it should be noted that Schmid’s category of duratives includes postural verbs like *zitten* ‘sit’, *staan* ‘stand’, *liggen* ‘lie’ and *lopen* ‘walk/go’. As can be seen in (41h), verbs like *lopen*, when used in this context, get a durative reading. (41h) should not be interpreted as ‘he has walked and worked the whole day’, but rather as ‘he has been working the whole day’. Note, by the way, that duratives

are not regarded as a separate category in the present study, but are treated together with other aspectual verbs like *beginnen* ‘begin’.

The IPP-effect is present both in Dutch and German, as well as in most of the dialects spoken in the Dutch and German language areas. It is absent, however, in Low German, Frisian, and in dialects spoken in Groningen and Northern Drenthe. For an overview of Dutch dialects with and without IPP and transition zones, see De Schutter (2000) and Barbiers et al (2008:39-40). Within the dialects that do have the IPP-effect, there are cross-linguistic differences with regard to the number of verbs displaying the pattern. While Present-day Standard Dutch has IPP with all the auxiliary categories listed above, other dialects have smaller sets of IPP-verbs. There are clear correlations between languages and dialects that have clustering properties and languages and dialects that display the IPP-effect: absence of the IPP-effect for example correlates with 3-2-1 order in three-verb clusters (e.g. Hoekstra 1994, De Schutter 1995) and with the occurrence of *ge*-less participles (e.g. Hoeksema 1988, Van den Wyngaerd, 1994, 1996). These generalisations concerning the IPP-effect, including syntactic analyses of the construction, will be discussed in chapter 7.

2.3 Verb clusters from a diachronic perspective

The previous section has provided a survey of verb clusters in Present-day Dutch and its dialects. We saw that order variation, especially within two-verb clusters, is a popular topic in synchronic syntactic research and that a variety of factors influences the choice between the variants. This section will show that order variation in the verb cluster is not a recent phenomenon. Even in some of the oldest surviving Dutch texts, different orders are found in two-verb clusters. Diachronic research shows that the order in two-verb clusters has developed over the centuries, which suggests that the synchronic variation in verb clusters may be a the result of long-term syntactic change. This long-term change is very likely related to the ongoing grammaticalisation of auxiliaries from lexical verbs to more grammatical elements.

Section 2.3.1 will elaborate on the grammaticalisation of auxiliaries. As we will see in section 2.3.2, the dialects that have previously been investigated show a steady increase of the 1-2 order in verb clusters from the 15th C. onwards. Section 2.3.3. discusses some factors that have been invoked to explain verb order variation in two-verb clusters in historical texts. Section 2.3.4., finally, introduces the hypothesis that the IPP-effect, which is an early Middle Dutch innovation, is probably related to this historical development.

2.3.1 Grammaticalisation of auxiliaries

It is widely accepted that auxiliaries or restructuring verbs are originally regular main verbs which undergo a long-term grammaticalisation process. An often-cited definition of ‘grammaticalisation’ is the following one by Kurylowicz: ‘[g]rammaticalisation consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status’ (1965:52). This section discusses the grammaticalisation of auxiliaries (also known as ‘auxiliation’) in general and of Dutch auxiliaries in particular.

Grammaticalisation affects both the form and the meaning of a linguistic item. With regard to form, a typical characteristic is that grammaticalised items lose phonological and morphological substance. Eventually they may turn into affixes and even disappear completely, although this is by no means a necessary development. Hopper and Traugott (2003: 109) state that ‘continued grammaticalisation is not inevitable, but may be suspended indefinitely at any point’. While grammaticalisation processes cross-linguistically often involve some phonological and morphological erosion, we will see in this study that the Dutch modals appear to have extended their morphological paradigm rather than having lost morphology in the process of grammaticalisation.

In terms of semantics, it has often been pointed out that grammaticalisation involves loss or bleaching of meaning (e.g. Lehmann 1995), that is, of *lexical* meaning. The linguistic items that are subject to grammaticalisation acquire a more *grammatical* meaning instead. A well-

known example is Proto-Germanic *skulan*, which originally meant ‘to owe’ but in different Germanic daughter languages has developed a more grammatical, modal meaning (e.g. German *sollen* ‘must’, Dutch *zullen* ‘shall, will’ and English *shall*). This semantic development often goes hand in hand with the extension of the grammatical item to new contexts (Heine 2003). Dutch *gaan* ‘go’, for example, could only be combined with an animate subject in Middle Dutch, and only had the literal meaning ‘to walk’ (Van der Horst 1998). In Present-day Dutch on the other hand, the verb *gaan* may also convey the grammatical meaning of futurity, and when it is used with this meaning it can take any subject, including inanimate subjects, e.g.:

- (44) *De ladder gaat omvallen*
 the ladder goes PART.fall.INF
 ‘The ladder is going to topple’
- (45) *De documentaire gaat beginnen*
 the documentary goes begin.INF
 ‘The documentary is going to begin’

According to Heine (2003) the grammaticalisation of auxiliaries is characterised by a morphosyntactic mechanism that he calls *decategorialisation*. This process involves a gradual loss of verbal morphosyntax in the auxiliary itself, whereas its complement gradually loses nominal or adverbial characteristics. Decategorialisation is very clearly visible in the English modals, which have lost some typical verbal properties such as the ability to be complemented by a direct object or adverbial, and take bare infinitival complements only. Supposedly, there is always a stage in which both options co-exist in the language, where the auxiliary can be characterised as polysemous. Many of the Dutch auxiliaries (including some modals) that are discussed in this dissertation, may be used either with a verbal or with a non-verbal complement, and thus appear to be in this polysemous stage. Note that the long verb clusters in Dutch constitute a special case with respect to

decategorialisation, since auxiliaries in such clusters are often verbal complements and auxiliaries at the same time.

Auxiliaries are typically considered to represent an intermediate stage of grammaticalisation. They have evolved from lexical verbs to more grammatical items, or, to be more accurate, markers of tense, aspect, or modality (TAM).⁵ However, they are still independent lexemes and have not (yet) turned into affixes. Tense, aspect and modality in Present-day Dutch are often expressed by separate auxiliaries, which makes the Dutch verb system analytic rather than synthetic. Combinations of tense, modality and aspect markers are possible within the verbal complex since auxiliaries may be combined into verb clusters almost freely.

Diachronic data suggests that this analytic system is relatively recent. Previous scholarship shows that the origin of the analytic future with *zullen*, for example, should be dated shortly before (e.g. Kern 1912) or around (e.g. Van der Wal 1992) the first written records in Dutch, i.e. around 800-900 AD. The development of the analytic perfect with *hebben* is of later date. It started probably around 1000 AD and was introduced with different main verb types at different rates (e.g. Kern 1912, Oubouzar 1974, Duinhoven 1985, Van der Wal 1986; 1992). Chapters 6 and 7 of this dissertation will show that some three-verb syntagms that are very common in Present-day Dutch are in fact Early Middle Dutch innovations. These developments involve the grammaticalisation processes of several auxiliaries and the interplay between them. All this suggests that the Dutch verb system has gradually become more analytic over the centuries, yielding an increasing number of combinations between different auxiliaries.

As we will see in section 2.4 of this chapter, formal theories of verb clusters differ in their assumptions on the size of the verbal complement of auxiliaries. I assume that a verbal complement may vary in size from full clausal

⁵ This cross-linguistic pattern has also been referred to as a V(erb)-to-TAM-chain.

to bare verbal, and that grammaticalisation of auxiliaries involves a gradual reduction of their complement size. Under this view, auxiliaries with the smallest complements are considered to be the most grammaticalised. This is also the case for Dutch, although we will see in chapter 7 that the increase in frequency of the infinitival marker *te* in verbal complements from the 17th C. onwards may have slowed down this development for some auxiliaries, since *te* unambiguously points towards a larger complement size (see also Van der Horst 1998).

Another central assumption in this dissertation is that Dutch auxiliaries, as they proceed further along the grammaticalisation path, gradually lose their own argument structure and become a tight syntactic unit with their verbal complements, which is corroborated by the fact that the verbs in a cluster are almost invariably adjacent to each other, especially in longer clusters. Perhaps some combinations of a main verb and an auxiliary may even be considered to be compound verbs. Evidence for this view can be taken from the dialects. Recall the 2-3-1 order discussed previously in this chapter, in clusters with IPP, as in example (46).

- (46) *dat hij gaan² zwemmen³ is¹*
 that he go.IPP swim.INF is
 ‘that he has gone swimming’

Since this verb order is very frequent in an area that typically has 1-2 order in two-verb clusters with an auxiliary and an infinitive, and 2-1 order in two-verb clusters with an auxiliary and an participle, it could be argued that *gaan* and *zwemmen* behave as a compound participle, preceding the perfective auxiliary *is* (see Barbiers and Bennis 2010 for a similar analysis).

Some nonstandard varieties (especially Flemish dialects) display another phenomenon that provides evidence for this analysis, again in clusters that have the IPP-effect. It should be mentioned first that the choice of the perfective auxiliary in Dutch is dependent on its direct verbal complement: some verbs

are ‘conjugated’ with perfective auxiliary *hebben* ‘have’, others with *zijn* ‘be’. Sometimes, however, the perfective auxiliary in three-verb syntagms with IPP is congruent not with its direct verbal complement but rather with a verb lower in the syntactic hierarchy (see also De Rooij 1991, Van der Horst 1998). The perfective auxiliary in (47b) for example, is not *hebben* ‘have’ (as it would be in Standard Dutch, see 47a), but *zijn* ‘be’. Since this happens only when the verbal complement of the IPP-verb is a verb normally conjugated with *zijn*, such as *blijven*, it is safe to say that the choice of the perfective auxiliary *zijn* is triggered by this lower verb. What this suggests, is that the auxiliary *moeten* in (47b) has become ‘transparent’ for auxiliary selection, or, that the auxiliary *moeten* and the main verb *blijven* in fact behave like a compound verb.⁶

(47a) ... *dat hij heeft¹ moeten² blijven³* (Standard Dutch)

that he has must.IPP stay

(47b) ... *dat hij is¹ moeten² blijven³* (Flemish dialects)

that he is must.IPP stay

both: ‘that he has had to stay’

In conclusion, with the grammaticalisation of a number of auxiliaries, Dutch syntax has undergone a gradual development from a synthetic verb system into an analytic system, during which tense, mood and aspect were increasingly marked by separate auxiliaries. We know from the literature that if grammaticalisation proceeds far enough, grammaticalised auxiliaries may eventually become bound morphemes, thus turning effectively into synthetic TAM markers again. It is unclear and impossible to predict whether this will happen in the Dutch verb system as well. The following chapters will show, however, that the fixing of verb order and some innovations in three-verb clusters may be interpreted as the first steps in the direction of a renewed

⁶ Interestingly Warner (1993) and Denison (1993) have described similar phenomena for the modals in Old English.

synthetic system. In chapters 6 and 7, we will explain the grammaticalisation of Dutch auxiliaries in general and of Dutch modals and perfective verbs in particular in terms of the increasing ability to scope over other auxiliaries, allowing for new and longer combinations of verbs.

2.3.2 Historical developments in verb order variation

Order variation in the two-verb cluster in Dutch has been attested from the earliest records onwards (e.g. Quak and Van der Horst 2002, Van der Horst 2003). Some previous studies have shed light on the diachronic development of verb order variation in Dutch, in particular with regard to two-verb clusters. These studies show some interesting changes in the period between the 13th and the 17th century. An overview of the most important diachronic studies of verb order is given below.

Study	Dialects studied	Centuries	Genre
De Meersman (1990)	Flemish, Brabantic	13 th to 16 th	Sample of different genres
Burridge (1993)	Brabantic, Hollandic	14 th to 16 th	Artes literature
Coussé (2008)	Flemish, Brabantic, Hollandic	13 th to 20 th	Official and narrative texts

Table 2.2: Previous diachronic studies of verb order in Dutch

In what follows I will sketch the broad historical development of verb order in two-verb clusters as it is described in the literature. The discussion relies strongly on Coussé (2008), since this is the most comprehensive study both in terms of geographic and diachronic coverage. In contrast to De Meersman (1990), the results in Coussé (2008) are also specified according to the different auxiliaries studied.

Coussé investigates the historical development of clusters with *hebben* 'have', *zijn* 'be' and *zullen* 'shall'. The earliest tokens are from the second half of

the 13th C. and show variation between 1-2 order and 2-1 order in all the cluster types under investigation. The share of clusters with 1-2 order is around 20% in two-verb clusters with *zijn*, around 35% in clusters with *zullen* and around 65% in clusters with *hebben*.⁷ From this point onwards, Coussé observes a significant development in the direction of the 2-1 order in all the syntagms. In the first half of the 15th century, all of these have more than 80% 2-1 order.

In later centuries, however, the share of the 1-2 order begins to increase once more. This happens earlier and at a faster rate in clusters with *zullen* and an infinitive than with the other two auxiliaries: *zullen*-clusters show around 30% 1-2 order in the 16th C, around 70% in the 17th C., and 80% to 90% in the following centuries. As discussed in the previous section, clusters with a modal verb (like *zullen*) and an infinitive have nearly 100% 1-2 order in Present-day Standard Dutch, although there is still variation in the dialects.

Clusters with the auxiliaries *zijn* and *hebben*, both of which are complemented with a past participle, are remarkably similar to one another in their development. The share of 1-2 order in these syntagms remains low (around 10%) in the 16th C, and rises to around 40% in the 17th C. and 50% in the following centuries⁸. As we saw in the previous sections, clusters with an auxiliary and a past participle are still subject to variation between the two possible orders in Present-day Dutch.

To sum up, all the syntagms that Coussé has investigated show a development towards 2-1 order until the beginning of the 15th C. Afterwards the 1-2 order is reintroduced, but this happens at a different rate in different syntagms. The data presented in Coussé suggest that two processes of linguistic change have taken place: first a change towards 2-1 order, and second a change

⁷ The auxiliary *zijn* in fact represents two different syntagms: *perfective + participle* and *passive + participle*. Since we only give a broad overview of the diachronic developments here, and since the results for both syntagms seem to be quite comparable, we will not distinguish between them here.

⁸ These numbers are based on Coussé's discussion of official texts. For narrative texts the proportions are slightly different, but the trends are the same.

in the opposite direction, 1-2 order. The second change seems to be (almost) completed in the case of clusters with *zullen* and an infinitive. In the case of clusters with an auxiliary (*hebben* or *zijn*) and a participle, the variation that is observed in Present-day Dutch may be the result of a historical development in which the 1-2 order gradually replaces the 2-1 order. The period between 1400 and 1600 has clearly been pivotal in this long-term process of syntactic change. It is unclear, however, what has happened in this period that made the (Standard) Dutch language shift in the direction of the 1-2 order.

2.3.3 Factors influencing verb order variation in historical texts

Factors influencing verb order variation in earlier stages of Dutch have previously been studied by a handful of historical linguists. As with Present-day Dutch, most studies discuss two-verb clusters only, and many focus on clusters with an auxiliary and a participle. One of the language-external variables that have been investigated, apart from the factor ‘time’ which has been discussed in the previous section, is ‘dialect’.

Geographically speaking, previous corpus studies have been confined to dialects spoken in the southern provinces and/or Holland (mostly as a result of the available written sources), and less attention has been paid to the other Dutch-speaking areas. As we have seen in table 2.2 above, De Meersman (1990) only investigates texts from Flanders and Brabant. Burridge (1993) discusses texts from Brabant and Holland, and Coussé’s research (2008) covers texts from all three of the above-mentioned regions. According to Coussé’s data, increase of the 2-1 order (13th and 14th C.) is witnessed earlier in Hollandic than in Brabantic and Flemish texts, both in infinitive and in participle clusters (e.g. De Meersman 1990 and Coussé 2003, 2008). In the subsequent change towards 1-2 order on the other hand (15th to 18th C.), the Brabantic dialect seems to have been the most progressive, also regardless of the cluster type.

Some of the intra-linguistic factors that affect verb order in Present-day Dutch have been investigated in historical texts as well. As in the studies of Present-day Dutch, the choice of the auxiliary is found to have a significant

impact on verb order in virtually all the diachronic studies of verb order. One important observation is that past participles are found preceding the auxiliary more often than infinitives across the board, much like in Present-day Dutch (cf. the previous sections).

Another intra-linguistic factor that has been explored is prosody or sentence rhythm. As we saw in section 2.2.5.4, the accent at the end of the clause has often been assumed to influence the choice between the 1-2 order and the 2-1 order. Rhythmic features in historical texts have been discussed by Overdiep (1931, 1932, 1935), Vanacker (1963) and De Meersman (1975). The latter three studies found little or no impact of prosody on verb order. Following Behaghel (1932), this factor has been the topic of some diachronic studies of German as well. Ebert (1981) for example finds that stress on the preceding word has a significant effect on verb order, with the 2-1 order favoured after unstressed words. Methodological problems in investigating prosody, in particular that it is very hard to determine sentence rhythms in written material and especially in historical texts, are raised by many scholars, e.g. Van Leuvensteijn (1985:124).

Coussé (2008) has found that the 1-2 order in Middle Dutch clusters with an auxiliary and a participle correlates with extraposition of NP objects, which in turn correlates with focus on these constituents. She explains the correlation between extraposition and 1-2 order in terms of a preference for the main verb and the object to be adjacent. Her hypothesis then is that the 1-2 order itself eventually came to be associated with focus on the direct object, whether this object was extraposed or not. Similar facts are discussed for Early New High German by Sapp (2006), who also finds that focus on the object favours the 1-2 order in two-verb clusters. Sapp argues that the 1-2 order and extraposition of the direct object were both used as a strategy to mark focus of the object by

means of word order. Both strategies were often used at the same time, hence the correlation.⁹

Many research questions regarding the order variation in older stages of Dutch remain unanswered: since most studies discuss two-verb clusters only, previous scholarship does not answer the question how the observed changes in two-verb clusters relate to the development of longer verb clusters. It is also unclear whether the same historical developments took place in dialects other than Flemish, Brabantic and Hollandic, for instance the dialects in the north and in the east. Furthermore, since the discussion in Coussé (2008) focuses on clusters with *hebben* or *zijn* and a participle, there is no account yet that explains the rapid and drastic change towards 1-2 order in *zullen*-clusters from 1400 onwards.

As we will see in chapter 3, our corpus not only includes dialect material from Brabant, but also from Utrecht and from the northeastern province of Drenthe. Chapters 4 and 5 will show that verb clusters in these dialects indeed show a development in the direction of 1-2 order, and interestingly, that this development correlates with an increase in frequency of longer verb clusters.

2.3.4 The history of the IPP-effect

The question how and why the IPP-effect arose in West-Germanic languages has been addressed by many historical linguists. One of the few aspects that these different accounts agree upon is that the IPP-effect must have been an innovation at some point. No trace of it can be found in the extant Early Germanic (Gothic, Old High German, Old Low Franconian, Old English) records (see also Coupé and Van Kemenade 2009). For German, the first attestations have been traced back to the middle of the 13th C. (Paul 1898, § 335c). Matters

⁹ Besides the similarities between Coussé (2008) and Sapp's (2006) diachronic accounts and the synchronic accounts of De Sutter (2005), there is the fundamental difference that extraposition in Middle Dutch and ENHG promotes the use of the 1-2 order instead of the 2-1 order. So far there is no explanation why this should have changed.

of debate in the literature include the questions how the innovative use of the infinitive should be explained, and what brings about the deviant verb order patterns in the IPP-construction.

It is interesting to see that the IPP-effect, after an initial stage where it is optional for a small number of auxiliaries, gradually extends to other auxiliaries. Also, as we have already mentioned in 2.2.6, postural verbs like *zitten* shift to a durative (i.e. more grammaticalised) reading when they appear in IPP-constructions. These facts suggest that the development of the IPP-construction is closely related to the grammaticalisation of auxiliaries as described earlier in this chapter.

A more detailed outline of the existing analyses, diachronic as well as synchronic, will be given in chapter 7, which discusses the rise and spread of the IPP-effect in Dutch. As we will see, this syntactic innovation allowed new combinations of auxiliaries to arise and as such played a key role in the development of Dutch (long) verb clusters.

2.4 Syntactic analyses of verb clusters

While many factors investigated in data-oriented approaches of verb clusters have already been discussed in the previous sections, there is also a tradition of more formal approaches to the phenomenon of verb clusters. These formal accounts typically take a broader perspective than (Present-day) Dutch verb clusters only, and often do not make use of extensive corpus or data research. While the present study primarily analyses verb clusters from a quantitative and usage-based perspective, the assumptions I make about verb clusters are indebted to this formal tradition. Also, the observations in this study are valuable and relevant to some theoretical debates. The main issues from the theoretical literature will therefore be discussed in the following sections.¹⁰

¹⁰ The technical details of the various analyses will not be discussed at length here. The reader is referred to Wurmbrand (2005) for a comprehensive overview of the theoretical literature not only on Dutch, but also the other West-Germanic languages.

2.4.1 Mono-clausal and bi-clausal approaches

One of the less controversial ideas in the theoretical literature is that all the verbs in a verb cluster belong to the same clause. Because of this, verb cluster phenomena are also referred to as *clause union* (e.g. Aissen and Perlmutter 1976) or *restructuring* phenomena (e.g. Rizzi 1976, Wurmbrand 2004, 2005). Present-day Dutch actually has two types of infinitival complementation: mono-clausal and bi-clausal constructions. In clauses with a verb cluster, the subordinate infinitive belongs to the same clause as its matrix verb, e.g. (48).

- (48) *dat hij niet wil eten.*
 that he not wants eat.INF
 'that he does not want to eat'

Constructions in which the non-finite verbal complement may be analysed as a separate clause typically involve infinitives preceded by the infinitival marker *te* 'to'. The clausal complement as a whole occurs to the right of the matrix verb, e.g. (49). The occurrence of such a complement to the right of the verb is referred to as *extraposition*.

- (49) *dat hij beweert daar alles van te weten.*
 that he claims there everything of to know
 'that he claims to know everything about that'

Some Dutch verbs selecting a *te*-infinitive have both uses, e.g. *proberen* 'try', *beloven* 'promise', *beweren* 'claim'. Arguments for mono-clausality in verb clusters often derive from the complementary distribution witnessed in these hybrid verbs. Various syntactic tests can be performed on both variants which suggest that the clustering variant is mono-clausal and the non-clustering variant is bi-clausal (for an overview, see Kiss and Riemsdijk 2004:6-9). One of these is a test involving the scope of negation. An example is given below:

(50a) *dat hij geen onderscheid probeert te maken*

that he no distinction tries to make

‘that he does not try to make a distinction’/ (also) ‘that he tries not to make a distinction’

(50b) *dat hij probeert (om) geen onderscheid te maken*

that he tries COMP no distinction to make

(only) ‘that he tries not to make a distinction’

Given that the scope of a negative determiner *geen* is limited to the clause it belongs to, the fact that (50a) allows the interpretation ‘does not try to’ implies that the negation must be inside the clause that contains *proberen*, i.e. that *proberen* and *maken* are in the same clause. The variant with extraposition (50b) on the other hand allows only the reading with narrow scope. In other words, the negation applies only to the verb *maken*, which suggests that (50b) indeed involves a main clause and a subordinate clause.

There is debate, however, about whether verb clusters like (48) and (50a) are mono-clausal from the start or are the result of a syntactic derivation from a bi-clausal base structure. One of the first scholars defending the second option is Evers (1975b), who assumes that verb clusters are the result of a ‘verb raising’ rule: the embedded verb is raised in the hierarchy and adjoins to the higher verb. Evers proposes that a ‘structure pruning principle’ applies to the S-node of the embedded clause. This principle, which Evers (1975a:147) for obvious reasons called the *Guillotine principle*, stipulates that a clause that has lost its head (i.e., its verb) does not survive and is therefore deleted. This results in a single clause containing two verbs. Subsequent analyses building on this idea include Hoekstra (1984) and Rutten (1991). A problem in these approaches is that morphosyntactic quirks like the IPP-effect and unexpected auxiliary selection in three-verb clusters are difficult to explain; these would have to be generated *after* verb raising, since it is hard to conceive that verbs from different clauses should influence each other’s morphosyntax so drastically.

Mono-clausal approaches claim that verbal complements in restructuring constructions are smaller categories than clauses, typically verb phrases (VP's). In this type of approach, no derivation from a full clause takes place. Several researchers propose that the infinitival complements in verb clusters are 'tense deficient': the embedded verb has to be interpreted as occurring simultaneously with the matrix verb. This tense deficiency in the infinitival complement motivates its movement to the closest tense head, i.e. the higher VP. Examples of such accounts are Guéron and Hoekstra (1988), Bennis and Hoekstra (1989), Broekhuis (1992) and Wurmbrand (2001). A mono-clausal proposal in the framework of Lexical Functional Grammar (LFG) is Bresnan et al. (1982).

My assumption in this study is that the complex of an auxiliary and its infinitival or participial complement derives historically from a main verb with a full clausal complement, but is synchronically a mono-clausal construction in which the auxiliaries and the main verb together constitute a verbal complex. We have seen earlier in this chapter that some auxiliaries, like causatives, bring an extra argument to this verbal complex. The historical development of auxiliaries can then be explained in terms of a gradual reduction of the verbal complement as described earlier in this chapter. As argued before, I consider hybrid verbs like *proberen* which have optional clause union *and* optional IPP, to be less far advanced on this grammaticalisation path than verbs with a bare infinitival complement.

The Dutch verbal complex is probably best described as a complex predicate in the sense of Alsina, Bresnan and Butt (1997:1): '...complex predicates may be formed by syntactically independent elements whose argument structures are brought together by a predicate composition mechanism that differs from the usual types of complementation (...) The resulting argument structure then shows some of the behaviour of a simplex predicate.' Regardless of the number of verbs in the cluster, I assume that present-day verb clusters (at least those with a bare infinitive or a participle) consist of only one clause in which the verbs share their argument structure.

2.4.2 Movement theories: V-Raising or VP-raising

As we saw above, it has often been stated in the literature that verb clusters involve reordering of some sort. A matter of extensive debate concerns the nature of the elements that are being reordered. Some scholars advocate that verb clustering phenomena involve movement of the head only, i.e. movement of V to a higher V and subsequent incorporation (e.g. Haider 2003). In this view, verb clusters are in fact complex heads. A common argument in such analyses is the fact that verbs in a cluster are usually adjacent.

Other scholars assume that it is not the verb, but a projection of the verb (e.g. the verb phrase as a whole) that moves to a higher position. This view is supported by the fact that many West-Germanic dialects allow some elements to interfere between the verbs in a cluster. Crucially, instances of cluster interruption only occur in right-branching clusters (1-X-2) and never in left-branching clusters (2-X-1). Such structures have been analysed as Verb Projection Raising (VPR) by, among others, Den Besten and Broekhuis (1989), Den Besten and Rutten (1989) and Haegeman (1992). These authors propose that instances like (44b) involve right-adjunction of the entire verb phrase (or a higher level projection, e.g. Van den Wyngaerd 1989) to the higher VP, which results in non-verbal material occurring between the verbs in the cluster. Any non-verbal material that occurs to the left of the verb cluster in such clauses (e.g. (51c) and (51d)), is then the result of leftward scrambling out of the raised VP. As a result, part of the non-verbal material occurs before the verb cluster and part of it occurs between the verbs.

- | | | |
|-------|---|------------|
| (51a) | <i>da Jan [VP vuor Marie da boek kuopen] wilt</i> | base order |
| | that Jan for Marie that book buy.INF wants | |
| (51b) | <i>da Jan t^{VP} wil [VP vuor Marie da boek kuopen]</i> | VPR |
| | that Jan wants for Marie that book buy.INF | |
| (51c) | <i>da Jan [PP vuor Marie] t^{VP} wil [VP t^{PP} da boek kuopen]</i> | VPR |
| | that Jan for Marie wants that book buy.INF | |

- (51d) *da Jan [NP da boek] t^{VP} wil [VP vuor Marie t^{NP} kuopen]* VPR
 that Jan that book wants for Marie buy
 all: 'that Jan wants to buy that book for Marie'
 (West-Flemish dialect, Haegeman 1992:181-184)

While many of these authors (e.g. Haegeman 1992) maintain the head-to-head movement analysis for 'regular' verb clusters, some scholars (e.g. Koopman and Szabolcsi 2000, Wurmbrand 2007) argue that all verb clusters may be analysed as VP movement with subsequent scrambling. These approaches fit in a theory-driven attempt to eliminate the possibility of head movement altogether. What makes such theories less attractive, however, is that they offer no means of making a structural distinction between those verb combinations that do display clustering or clause union phenomena (like the IPP-effect) and those verb combinations that do not.

Both the verb raising and the verb projection raising approach rely on the assumption that verb clustering and verb order variation are the result of syntactic movement. We will see in section 2.4.4 that some scholars attribute order variation to linearisation at the phonetic level rather than to syntactic movement. Throughout this study, we will assume that 'true' verb clusters in Present-day Dutch are complex verbs formed in the lexicon, which may surface in different orders at the phonetic level. Before that, the next section will show how verb order variation is accounted for in 'traditional' generative accounts, i.e. by deriving all the orders from one underlying order.

2.4.3 Derivational accounts of verb order variation

The order variation in Dutch verb clusters poses an interesting problem for many grammatical theories. While other instances of alternative word orders, like scrambling or topicalisation, are quite obviously motivated by information structure principles, this is not straightforwardly the case with verb order variation. A typical theoretical question regarding verb order is whether the verbs are freely generated in any order or whether there is a derivational relation between the various possible orders. The predominant view in the formal research tradition is that one of the orders is the basic order, and that other orders are derived from it¹¹. As Wurmbrand (2005:229) points out, however, there is little consensus on the details of i) what the basic order is, and ii) how the reordering is derived.

Regarding the first point, the basic order, the traditional view is that the verbal complement is base-generated to the left of the auxiliary, yielding a left-branching base structure (e.g. 2-1, 3-2-1, etc.). Other orders that occur are surface orders derived from this base structure. This idea is inspired by the assumption that the basic word order of Dutch and other West-Germanic languages is OV, i.e. direct objects and other complements are generated to the left of the verb (e.g. Evers 1975a, Den Besten and Edmonson 1983)¹². More recent accounts rely on Kayne's (1994) *Linear Correspondence Axiom*, which stipulates that all languages involve head-initial base structure and which prohibits rightward movement. These accounts assume that verb clusters are base-generated as right-branching structures. This means that the orders 1-2, 1-2-3 etc. reflect the basic word order and that other orders are derived orders (e.g. Den Dikken 1994, 1995b, 1996; Zwart 1996; Haegeman 1998b).

¹¹ Sturm (1990) however defends a different analysis, in which the two verbs are sister nodes that may be inverted, resulting in free syntactic variation.

¹² The SVO order in main clauses is then assumed to be the result of a 'verb second' rule, which stipulates that the finite verb in main clauses moves to the second or first position in the clause (e.g. Den Besten 1983).

Wurmbrand (2005) shows that all the possible word orders attested in verb clusters may be derived from either base structure. In the case of the orders 1-2-3, 1-3-2, 2-3-1 and 3-2-1, she stipulates an *inversion* rule which allows two sister nodes to invert. This rule, which is inspired by Haegeman and Van Riemsdijk (1986), predicts that 2-1-3 and 3-1-2 are unavailable, since the second and the third verb in the cluster are more deeply embedded than the first verb and therefore have to be adjacent. This prediction is correct for the 2-1-3 order, but incorrect for 3-1-2. Under both the head-initial and the head-final approach, an extra operation (leftward movement of 3) is thus needed to derive the 3-1-2 order. From this we may conclude that the observed variation does not provide any empirical evidence for a left-branching or a right-branching base structure, leaving the issue of directionality unresolved.

The argumentation in Barbiers and Bennis (2010) is very similar to that in Wurmbrand (2005). These authors claim that the internal hierarchy of the cluster alone can explain the availability of the orders 1-2-3, 1-3-2, 2-3-1 and 3-2-1 and the unavailability of the 2-1-3 order, since the second and the third verb in the hierarchy constitute a single constituent and therefore may not be split up by the highest verb. This is shown by means of a simple constituency test. Any element that may take the position before the finite verb in a main clause can be considered to be a constituent. Since both the third verb itself (52a), as well as the complex of the second and the third verb (52b) may take this position, the authors conclude that [*kunnen zwemmen*] constitutes a constituent, of which [*zwemmen*] is a subconstituent. Therefore these two verbs have to be adjacent under both a right-branching and a left-branching account of verb order.

(52a) *Zwemmen³ vind ik dat Jan wel moet¹ kunnen²*

swim find I that Jan PART must can.INF

(52b) *Kunnen² zwemmen³ vind ik dat Jan wel moet¹*

can.INF swim find I that Jan PART must

both: 'I think that Jan has to be able to swim'

(Barbiers and Bennis 2010:30-31)

A remaining problem is the false prediction that 3-1-2 should be unavailable. As a solution to this theoretical problem, Barbiers and Bennis (2010) propose that the third and most deeply embedded verb (either an infinitive or a participle) is probably hybrid between a verbal and a non-verbal use. First, let us consider participles, which have an adjectival use e.g. (53) next to their verbal use, e.g. (54).

(53) *een gemaakte keuze*

a made.PTCP choice

'a choice (that has been) made'

(54) *dat er een keuze zal¹ worden² gemaakt³*

that there a choice shall become made. PTCP

'that a choice will be made'

The argument in Barbiers and Bennis (2010) is then that the 3-1-2 order in (55) is indicative not of a three-verb cluster, but of a two-verb cluster preceded by an adjectival participle.

(55) *dat hij het boek geschreven⁽³⁾ zal¹ hebben²*

that he the boek written. PTCP shall have

'that he will have written the book'

Continuing this line of reasoning, the authors propose that the 1-3-2 order in such clusters may also be interpreted as a two-verb cluster interrupted by an adjectival participle. This is supported by the geographical spread of the construction: the construction with a participle in the intermediate position (1-3-2) is confined to southern Dutch dialects and southern Standard Dutch. This is exactly the area where cluster interruption with non-verbal material is found on a regular basis. It therefore makes sense to interpret the 1-3-2 order as in (56) as a case of cluster interruption comparable to (57).

- (56) *dat hij het boek zal¹ geschreven⁽³⁾ hebben²*
 that he the book shall written.PTCP have.INF
 ‘that he will have written the book’
- (57) *dat hij het boek zal¹ naar huis brengen²*
 that he the book shall to home bring.INF
 ‘that he will bring the book home’

There are thus two ways to analyse clusters with 1-3-2 order like the one in (49): the inversion analysis according to Wurmbrand (2005) and the non-verbal analysis according to Barbiers and Bennis (2010).

Barbiers and Bennis (2010) propose a similar analysis for the 3-1-2 order in the double modal syntagm. The argument is then that the infinitive is hybrid between a verbal use as in (58) and a nominal use as in (59), and that (60) therefore may be interpreted as a two-verb cluster with a nominalised infinitive.

- (58) *dat ik vroeg moet¹ opstaan²*
 that I early must get.up.INF
 ‘that I have to get up early’
- (59) *Dat vroege opstaan is moeilijk*
 that early getting-up is difficult
 ‘This getting up early is difficult’

- (60) *dat hij vroeg opstaan⁽³⁾ zal¹ moeten²*
 that he early get-up shall must
 ‘that he will have to get up early’

Barbiers and Bennis (2010) also claim that the 1-3-2 order in the double modal syntagm should be interpreted as an instance of cluster interruption; this claim however lacks empirical strength, since the 1-3-2 order in this syntagm does not occur in the typical cluster interruption area, i.e. the south of the Dutch language area. They conclude that ‘true’ verb clusters surface as either purely left-branching or purely right-branching structures, and that it depends on one’s theoretical assumptions which one is the base structure and which one is derived.

Given the fact that Dutch verb clusters – at least two-verb clusters – have developed historically from more left-branching (2-1) to more right-branching (1-2) structures, an interesting question might be whether underlying order of the verbs in the cluster has changed from left-branching to right-branching at some point between the Middle Dutch and the Present-day Dutch period. This study however focuses more on the development of verb clusters in actual language use than on solving theoretical issues, which is why we will make no assumption about the question whether clusters are base-generated with left-branching or right-branching structure at different points in time.

2.4.4 Verb order variation as linearisation at the phonetic level

More recent studies have abandoned the idea that verb order variation is the result of syntactic movement operations. Schmid (2005) for example proposes an account of verb order that does not rely on movement operations, but that evaluates the ‘best match’ between the abstract syntactic constituent structure and its (logically possible) linearisations. Wurmbrand (2012) attributes the order variation in three verb clusters to ‘PF-linearisation’, in which PF stands for phonetic form, i.e. the level of representation in which language structures are assigned a phonetic representation. This means that there is no syntactic

movement involved in verb order variation, only reordering at the phonetic level. The predictions remain the same: 1-2-3, 1-3-2, 2-3-1 and 3-2-1 can be obtained through PF-linearisation; 2-1-3 and 3-1-2 are unavailable. This means that an independent explanation is still needed to account for the 3-1-2 order, for example the proposal of Barbiers and Bennis (2010) which was introduced in the previous section.

The analysis of different verb orders as PF-linearisation has the advantage that verb order is secondary to the structural conditions inherent to the syntagm, including the occurrence or absence of IPP and the size of the verbal complement. This fits well with the assumption that the relative order of the verbs in the cluster depends on the structural properties of a verb cluster, and not the other way round. Much like Barbiers (2005b), this study presupposes that the range of morphosyntactic and order variation is construction or syntagm specific, but that the variation witnessed in actual language use is determined by sociolinguistic factors, like dialect, sociolect or idiolect. Historical developments often affect these sociolinguistic preferences, which in turn may lead to structural changes.

2.5 Conclusion

This chapter has laid the foundations for the rest of this dissertation. Many important issues regarding verb clusters, like the internal hierarchy of clusters, verb order variation and the IPP-effect, have been discussed from a synchronic as well as a diachronic point of view. We have also seen that there are different theoretical approaches to verb clusters, which vary in their assumptions of what verb clusters actually are: according to some, they are combinations of bare heads, according to others, they are full complementation structures from which non-verbal material has been scrambled.

My hypothesis in this study is that verb cluster phenomena should be explained historically in terms of a decreasing size of the verbal complement and a development from synthetic to analytic verb constructions. Synchronically, Present-day Dutch auxiliaries differ in the extent to which they

are advanced in this development, which means that the size of their complements varies. The most advanced auxiliaries in Present-day Dutch have a complement reduced to the extent that the argument structures of the verbs are merged and the resulting verbal complex behaves syntactically like a single verb.

In the next chapter, we will sketch the research design of this dissertation. The main intention of this design is to expose the historical developments that have led to the analytical verb system of Present-day Dutch. The results presented in the following chapters show that certain ordering patterns are (statistically) preferred over others in language use. We will see that left-branching structures become less frequent as clusters become longer, which suggests that even though they may be grammatically correct in some dialects, they are not preferred in actual language use. The conclusion of this dissertation sketches a scenario in which the increase in frequency of longer verb clusters has contributed to the gradual increase of the 1-2 verb order in Dutch.

Chapter 3 – Research design

3.1 Introduction

Having provided the background knowledge needed for the diachronic study of verb clusters in the previous chapter, I can now sketch the design of this study. Section 3.2 introduces the four case studies that form the heart of this study. The corpora that I have used for these case studies are presented in 3.3, while section 3.4 describes the research method that I have used, in particular the data set that has been constructed for this study. The final section of this chapter gives a preview to the rest of the dissertation.

3.2 Case studies of Dutch in transition

We have seen in chapter 2 that, while some previous studies have been dedicated to the diachronic development of verb clusters, generalizations on verb order changes have not been associated before with the development of long verb clusters in Dutch. The aim of this study is therefore to contribute to the present understanding of verb clusters by identifying and trying to explain some interrelated syntactic changes in the Dutch verbal complex which have ultimately made the Present-day Dutch analytical verb system possible. This will be accomplished by investigating some Dutch dialects spoken in the 14th, 15th and 16th centuries, a period that can be characterized as the transition period from late Middle Dutch to early Modern Dutch. The main focus of this study can thus be summarized in the following overarching research question: ‘What are the syntactic changes that occurred in the Dutch verb system in the period from Middle Dutch to early Modern Dutch, and how did (the interaction between) these changes contribute to the development of the Present-day Dutch analytic verb system?’

This research question is addressed by means of four case studies focusing on different syntactic developments. Each case study is organized in a similar way: after determining the variation space of the syntactic phenomenon

on the basis of quantitative data, generalizations are made about the syntactic developments, and these developments will be interpreted and explained.

The first case study is about the development of verb order in clusters with two verbs. As shown in the previous chapter, order variation in two-verb clusters has been the topic of various diachronic studies of Dutch (e.g. Coussé 2008). My case study on two-verb clusters is designed in such a way that my data are complementary, as well as comparable, to those in other studies. The outcome of this case study roughly confirms the results of previous studies, i.e. that the 1-2 order in two-verb clusters has gradually increased in frequency from the 15th century onwards, at varying rates for different auxiliaries and in different dialects.

The diachrony of verb order in longer clusters on the other hand has received little or no attention in previous research. A second case study is therefore devoted to the internal verb order in clusters of three and more verbs in 14th to 16th C. Dutch dialects, paying special attention to the relationship of these findings with the perceived verb order developments in two-verb clusters. This case study shows that the verb order in longer clusters is remarkably stable across centuries, which suggests that longer verb clusters have an *inherent* tendency towards 1-2 order. I will propose an account that explains this inherent tendency on psycholinguistic grounds, more specifically production and processing cost.

The next two case studies explore two multiple-verb constructions that seem to be Early Middle Dutch innovations. The first construction consists of clusters in which a modal auxiliary is complemented by another modal and a main verb infinitive (MOD + MOD + INF), a construction that will henceforth be referred to as ‘the double modal construction’. The second construction is one in which the perfective auxiliary *hebben* takes another auxiliary and a main verb infinitive in its complement, with the latter auxiliary displaying the IPP-effect. Both constructions will be shown to have gained frequency in the period that this study focuses on. Not only do the case studies make the spread of these two innovations visible, they will also account for them in connection

with related developments in Dutch and other Germanic languages. It will be argued that these two innovations have made it possible to make new combinations of verbs in longer verb clusters, making them pivotal ingredients of the scenario that I will sketch to answer our central research question.

An important variable in any quantitative investigation of syntactic change is obviously ‘time’. In order to investigate the diachronic developments in each of the case studies, I have divided the centuries under investigation into relatively small time slots of ten years. Depending on the goals of each case study and the amount of data available, these time slots may be collapsed into bigger time slots of 20 or 50 years. The fact that a considerable amount of data is available from a large number of time slices will make it possible to plot the developments under investigation with relatively high accuracy.

A second variable that will be investigated is ‘dialect’. The term late Middle Dutch is in fact an anachronism: it is well known that Dutch was not standardized before the 17th C. (e.g. Van der Sijs 2004). Based on earlier scholarship as described in the previous chapter, my expectation was that a comparison between late Middle Dutch dialects would reveal dialect differences, either with respect to the nature of the developments, with respect to the timing, or both. Therefore each case study focuses on three different dialects that are relatively far apart geographically: the southern dialect of Brabant (‘Brabants’), the northeastern dialect of the Drenthe (‘Drents’), and the central dialect of Utrecht (‘Utrechts’)¹³.

Next to ‘time’ and ‘dialect’, a third variable that is incorporated in each of the case studies is ‘auxiliary type’. Two auxiliaries have been studied more closely: perfective *hebben* ‘have’ and modal *zullen* ‘shall, will’. These auxiliaries were selected for various reasons: first they are (already) frequent in the period under investigation, second they have been shown to differ from each other with regard to verb order in previous studies, and last but not least the

¹³ I refer to these dialects using the Dutch names. The names ‘Brabants’, ‘Utrechts’ and ‘Drents’ are derived from the names of the respective provinces: Brabant, Utrecht and Drenthe.

grammaticalisation processes of these two auxiliaries prove to be crucial in the development of the Present-day Dutch analytic verb system.

The effect of the variables time, dialect and auxiliary was measured both in two-verb clusters and in long verb clusters, so that it can be determined to what extent the developments correlate. As it turns out, this diachronic dialectal approach provides a solid basis for investigating diachronic developments and relating them to one another.

3.3 Corpora

The case studies described in the previous section involve substantial data research. Data has been obtained from different corpora, the most important of which are the *Van Reenen-Mulder* corpus (CRM) and the *Dutch in Transition* corpus (DiT). The former corpus contains 14th C. charters from the whole Dutch-speaking area, all of which include information about the location of origin and an exact date. This makes the corpus very well suited to investigate regional and diachronic variation. The second corpus, DiT, has been compiled at the Radboud University Nijmegen for the purpose of this study and other diachronic studies. It covers the 15th, 16th and 17th centuries, and consists primarily of legal and official texts. This corpus too is especially designed to study dialect variation, as it contains texts from different parts of the Dutch-speaking area, which again are dated and located exactly.

I have selected texts from three different dialect areas: the southern dialect Brabants, the northeastern dialect Drents and the central dialect Utrechts. The Brabants dialect is represented by texts from the southern city of Breda, including the nearby village of Oosterhout. This choice was made because many official texts from this city and its surroundings are available in both CRM and DiT. The second location, representing the 'Utrechts' dialect, is the city of Utrecht itself. This city is situated right in the middle of the Dutch-speaking area. The material from Utrecht that is available in the CRM corpus consists of 14th C. charters from the city and its surroundings. The 15th and 16th C. material from the DiT corpus consists of bylaws of the city guilds. In order to

study the northeastern dialect ‘Drents’, finally, I have investigated documents from different locations in the province rather than from a single city. The 15th and 16th material (DiT) consists of verdicts from a local court that gathered in turns in two neighbouring villages, Rolde and Anloo, in the province of Drenthe. This corpus data was supplemented with 14th C. charters from CRM that cover the whole province. These 14th C. texts are roughly situated in a 40 km radius from the villages Rolde and Anloo, where the 15th and 16th C. texts in the DiT corpus were produced.



Fig. 3.1: locations associated with the three dialects (map: *Google earth*)

All the texts selected are similar in genre: they are legal or official documents, which makes them quite formal in style and register. Whether such formal texts are the ideal genre for the study of linguistic phenomena, is a matter of debate. On the one hand it is of vital importance for this type of dialectologically oriented diachronic research that texts are adequately dated and located. Many historical linguists therefore choose to investigate legal and official texts rather

than other genres (e.g. De Meersman 1990:158, Van Loon 2002, Coussé 2008:46-47). Literary texts for example are less appropriate for linguistic research, because the surviving texts have often been copied repeatedly. This not only makes it hard to determine the actual origin of the texts, but it is also doubtful to what extent the original text has been preserved. Moreover, literary techniques such as rhyme and metre may obscure linguistic aspects like word order.

On the other hand, official documents are also problematic in some respects. Even if a document contains its place of origin, this by no means guarantees that this is the place where the author was born or that the author spoke and/or wrote in the dialect of this place. In order to circumvent this problem, localisation procedures have been developed for Dutch documents from the 13th C. (Mooijaert 1992) and the 14th C. (Rem 2003). These procedures aim to discover the origin of the author on the basis of linguistic (mostly phonological) evidence alone. So far, such tools have not been developed for later texts. As a result, the origin of the material in the 14th C. corpus *CRM* can be determined more reliably than the origin of the texts in the newer corpus *Dutch in Transition*. For lack of a better alternative, however, I consider any text that originates from a given location as exemplary for the language used in that location.

Another obvious objection against official documents might be the specific register and style used in such texts. It can certainly be said for Present-day Dutch that the language of official texts deviates in many ways from the 'normal' speech used in everyday communication. It is to be expected that this was also the case in older stages of Dutch, perhaps even more so since only a small and highly educated elite was able to write in the first place. Writing was certainly not as much an everyday activity as it is today. Therefore even the language of less formal genres like letters and diaries, might be more deviant from informal spoken language than it is in Present-day Dutch. I made the pragmatical choice to consider even the very formal texts as somehow representative of the dialect spoken at a given time and in a given location,

especially since the comparison of similar text genres from different locations or different points in time reveals syntactic differences and clear developments. After all, “[h]istorical linguistics can (...) be thought of as the art of making the best use of bad data” (Labov 1994:11). Conclusions from these historical data should be drawn with caution. An example will be given in the case study on verb order described in the next chapter, in which I found it was necessary to exclude certain formulaic expressions from the data counts in order to prevent corruption of the data.

The corpora described above are the sources from which the main data set has been extracted. The case studies on the double modal construction and the IPP-effect, however, required some additional research of data from earlier stages of Dutch and even from other (Old) West-Germanic languages. For example, the 13th Century Corpus Gysseling was consulted for both of these case studies. These additional corpora and the research methods used to investigate them will be described in the relevant chapters.

3.4 Research method

For the four case studies described above, a data set was constructed that consists of over 9000 clauses, each of which contains a verb cluster. Two auxiliaries have been selected, which both occur very frequently in the corpora. The first one is the perfective auxiliary *hebben* ‘have’. This verb can be used both as a main verb and as a perfective auxiliary. In the latter case it selects a past participle, as in (1).

- (1) ... *dat Simon het boek heeft¹ gelezen² / gelezen² heeft¹*
 that Simon the book has read / read has
 ‘that Simon has read the book’

The second auxiliary is modal *zullen* ‘shall, will’, which is invariably complemented by a bare infinitive. This is illustrated in the following example:

- (2) ... *dat Emma een boek zal¹ kopen² / kopen² zal¹*
 ... that Emma a book will buy / buy will
 'that Emma will buy a book'

A concordance programme (Wordsmith 4) was used to make a list of all the possible forms of *hebben* and *zullen* occurring in the DiT corpus. The third person singular of *zullen*, for example, is spelled variously as *sal*, *sall*, *sel*, *sell*, *sol*, *soll*, *zal*, *zall* or *zel*. The same programme was used to search the corpus for all the occurrences of both auxiliaries, including the contexts in which they occur. The 14th C. Van Reenen-Mulder Corpus on the other hand could be searched without making use of a concordance programme because this corpus is morphologically enriched: each word in the corpus is provided with a tag which includes the (Modern Dutch) lemma title and morphological information, thus allowing to circumvent spelling variation.

All the search results were imported as separate records in a Filemaker Pro database and were analysed individually. A fairly large amount of context before and after the verb was imported with each instance of *hebben* or *zullen* in order to determine the structure of the clauses. Sentences that remained impossible to interpret despite a careful study of the context were excluded. The amount of uninterpretable clauses proved very low compared to the large data set, so the risk of bias in the statistics is very small.

In order to create a uniform data set, the nonfinite forms of *hebben* and *zullen* were removed. The clause in (3) for example contains the form *hebben*, used as an infinitive. Since it is nonfinite, it is excluded from the set of clusters with finite *hebben*.

- (3) *Item als vader ende moeder oft enich van hen beyden (...)*
 Likewise if father and mother or one of them both
enich kint oft meer uutghehylict³ zullen¹ hebben², ...
 any child or more married-off shall have-INF

‘Likewise if a father and a mother or one of them will have given one or more children to someone in marriage, ...’ (Brabants, 1470-1479)

On the other hand the clause in (3) is still included in our *zullen* data set because it does contain a finite form (3rd person plural) of *zullen*.

Main clauses were also excluded from the core data set, because these, as in Present-day Dutch, usually have the finite auxiliary in the first or second position instead of in the clause-final verb cluster. These main clauses were saved in a separate data set, which, as we will see in chapters 6 and 7, was still useful in determining the frequency of the double modal construction and the IPP-construction. A corpus example of a main clause with *hebben* is given in (4).

- (4) *Soe synnen de droste ende XXIIII etten avergekomen ende*
 So are the judge and 24 counselors agreed and
hebben gewesen,...
 have decided
 ‘So the judge and his 24 counselors have agreed and decided that ...’
 (Drents, 1550-1559)

Another category of clauses that was excluded from the data set, were those cases where *hebben* occurs as a main verb, with only a direct object complement. This was never the case for *zullen*. Example (5) illustrates the main verb use of *hebben*, denoting possession.

- (5) *... soelc reght als dese vorgheide Andrys in dat*
 such claim as this aforementioned Andrys in that *vorghenoemt*
halster roecs heft
 aforementioned [measure] rye-GEN has
 ‘as much of the aforementioned amount of rye that the aforementioned Andrys is entitled to’
 (Brabants, 1320-1329)

The method described above eventually led to a set of 5260 tokens with *hebben* and 3993 tokens with *zullen*, in which each instance of *hebben* and each instance of *zullen* is the top verb of a clause-final cluster of two or more verbs.

All the subclauses with *hebben* and *zullen* were tagged for the form of the auxiliary, the dialect (Drents, Brabants or Utrechts), and the date. As the texts in the DiT corpus are divided in time slices of ten years, the logical procedure was to tag all the clauses according to the time slice they belonged to. A clause from 1406 would for example be tagged as “date: 1400-1409”. All the clauses were also marked for the number of verbs that the cluster consists of, and of course the internal order of these clusters was determined. Figure 3.1 shows an example of a tagged clause in our database. The verb cluster is printed in bold.

Text	Ende yemant, die dese copere, hierynne bruckige. onsen raide biibrenget, alse Jacob Scrodekiin, Egbert van Gruenenberch, Lambert van Zulen ende Johan van Hamelenberch, die sall dairhoff hebben half die kueren, als dat vierendeel van den alingen koorne, dat aldus gecoft warden sall , mitten goeden mannen van onsen rade vorscreven geliick te deylen, ende dat ander vierendeel onse stat. Ende dit sell dueren, thent die raet oude ende nywe eens beters off eens anders te rade wesen sellen.
Auxiliary	zullen
Form	sall
Dialect	Utrechts
Time slice	1420-1429
Nr of verbs	3
Verb order	3-2-1

Figure 3.1: a record from the database

In the following chapters, whenever I use the phrase ‘the data set’, this refers to the core set of 9253 subclauses.

3.5 Organisation of the following chapters

Each of the four case studies has been assigned a separate chapter. Verb order variation in two-verb clusters will be discussed in chapter 4. Chapter 5 is about order variation in long verb clusters. The rise of the double modal construction is investigated in chapter 6, and the IPP-effect will be studied more closely in chapter 7. Chapter 8 finally sketches a historical scenario, discussing the relationship between the diachronic developments discussed in chapters 3-7.

Chapter 4 – Order variation in two-verb clusters

4.1 Introduction

We saw in chapter 2 that verb order variation, especially within two-verb clusters, is a popular topic in Dutch syntactic research, synchronic as well as diachronic. Even in some of the oldest Dutch texts, variation between the 1-2 order and the 2-1 order is found in clusters of two-verbs (e.g. Quak & Van der Horst 2002; Van der Horst 2003). The present chapter discusses this variation in the period preceding the rise of the Dutch standard language, i.e. the 14th to the 16th century. As explained in the previous chapter, this study makes use of a large set of data which allows to study variation across time and space.

The next section presents the data on two-verb clusters and elaborates on a methodological issue in syntactic research, i.e. the problem of formulaic clauses. Section 4.3 then discusses the impact of three variables on verb order in our data set: auxiliary, time and dialect. These results are discussed and related to those in previous studies in section 4.4. This chapter ends with a conclusion in which the diachronic developments are summarized, and which also emphasizes the need to take longer verb clusters into consideration when accounting for these developments.

4.2 Two-verb clusters in the data set

4.2.1 Overview

The research method described in the previous chapter has yielded 9253 clusters with a clause final verb cluster, each of which contains a finite form of either the perfective auxiliary *hebben* ‘have’ or the modal/future auxiliary *zullen* ‘shall, will’. Most of these are clusters with two verbs. The data set contains 5039 two-verb clusters with *hebben* ‘have’ and 2874 two-verb clusters *zullen* ‘shall, will’. A corpus example of a two-verb cluster with *hebben* is given in (1), one with *zullen* in (2).

- (1) *Als van de brieve die de stat van Bruesel nu gescreven² heeft¹ aen*
 As of the letters that the city of Brussels now written has to
de scoutet van Etten ...
 the bailiff of Etten...
 ‘About the letters that the city of Brussels now has written to the bailiff
 of Etten...’

(Brabants 1440-1449)

- (2) *dat de weduwe nae dode Alerss dat guet sall¹ geneten²*
 that the widow after death Alert-GEN the property will enjoy
 ‘that the widow will benefit from the property after Alert’s death’

(Drents, 1550-1559)

The data search also yielded a number of instances of two-verb constructions in which the finite verb was not adjacent to the main verb. These were labelled as ‘interrupted clusters’ (see chapter 2, section 2.2.5.7). This was the case in 16 clauses with *hebben* and in 157 clauses with *zullen*. Interesting as these cases may be for further research – note also the difference in frequency of the phenomenon between *hebben* and *zullen* –, the phenomenon of cluster interruption lies outside the scope of this study. These cases were therefore excluded from the data counts in this chapter.

Table 4.1 below gives a broad overview of the results of our study of two-verb clusters, showing the internal order of these clusters divided by auxiliary, dialect and century.

Auxiliary	dialect	century	Order	
			1-2	2-1
<i>hebben</i>	Brabants	14 th	27 (36.0%)	48 (64.0%)
		15 th	135 (15.2%)	755 (84.8%)
		16 th	11 (14.3%)	66 (85.7%)
	Drents	14 th	19 (17.8%)	88 (82.2%)
		15 th	29 (1.1%)	2567 (98.9%)
		16 th	28 (3.1%)	876 (96.9%)
	Utrechts	14 th	0 (0.0%)	113 (100.0%)
		15 th	2 (0.8%)	248 (99.2%)
		16 th	2 (1.0%)	201 (99.0%)
<i>zullen</i>	Brabants	14 th	11 (26.2%)	31 (73.8%)
		15 th	270 (39.6%)	411 (60.4%)
		16 th	39 (23.9%)	124 (76.1%)
	Drents	14 th	7 (15.2%)	39 (84.8%)
		15 th	123 (12.9%)	831 (87.1%)
		16 th	193 (61.7%)	120 (38.3%)
	Utrechts	14 th	2 (1.9%)	102 (98.1%)
		15 th	17 (4.2%)	385 (95.8%)
		16 th	8 (3.3%)	236 (96.7%)

Table 4.1: overview of two-verb clusters in the data set

A first observation is that the 2-1 order is dominant in two-verb clusters with both *hebben* and *zullen*, although this dominance is more prominent in some segments of the corpus than in others. The only segment where the 1-2 order is dominant is the 16th century clusters with *zullen* in Drents. Before treating each of the three variables (auxiliary type, time and dialect) in more detail, the next section will illustrate with an example why certain formulaic contexts were excluded from these data counts.

4.2.2 Avoiding bias by excluding formulaic contexts

The corpora that have been used for this study consist of a specific genre, i.e. official texts. One of the characteristics of such texts is that they often contain

fixed expressions, for example at the beginning or the end of a charter. Verb clusters occurring in such contexts have been left out of the data set, because they might not give us straightforward information about the verbal syntax of the dialects that they come from and hence may cause bias in the statistics. I will illustrate this with one specific example. In many 14th century charters, a two-verb cluster with *zullen* occurs in the address formula, which is a standard component of the protocol (the opening part of the charter). An example is given in (3).

- (3) *allen luden de dessen breef zolen¹ sien² oft horen lesen do*
 all-the people who this letter shall see or hear read make
jch verstaen...
 I understand...
 'I make it clear to all the people who will see this letter or hear it read
 (aloud)...' (Drents, 1370-1379)

It has been pointed out in the literature that, as early as the 13th century, a certain degree of standardisation takes place in fixed expressions used in charters (e.g. Marynissen 1999, Goossens 2000). Marynissen (1999) finds a great deal of variation within the address formula in the earliest 13th C. texts, both in terms of the lexical verbs that are being used and in terms of verb order. The formula with a coordinated verb cluster with four verbs *zullen* 'shall', *zien* 'see', *horen* 'hear' and *lezen* 'read', as illustrated here in (3), is found first in texts from Flanders in the southwest. Two decades later the same formula is widely used in other areas like Brabant and Holland as well. As the choice of words in the formula becomes more fixed, so does the order in the verb cluster. Marynissen finds an increasing use of the 1-2 order in opening formulas of 13th C. charters. In other words, the choice for this verb order pattern correlates with the choice for a given lexical combination of words, which suggests that both may be the result of writing conventions.

Boonen (2005:10-11) shows that 14th C. charters from Utrecht mostly have 1-2 order in address formulas of this kind. Our 14th C. Utrechts data overlaps with the data discussed in Boonen (2005). The only difference is that we have also investigated supplementary texts from the city's surroundings. Our data confirm Boonen's and Marynissen's finding that the address formula most often has 1-2 order in the verb cluster. What is more, the 14th C. charters from Brabant and Drenthe that I have studied show the same pattern, as can be seen in table 4.1. The order of verbs in the address formula is almost categorically 1-2 throughout the 14th C. material in our database. The table below now reveals a striking difference between these formulas and the non-formulaic text: the canonical 14th C. order in two-verb clusters with *zullen* is the reverse order 2-1, which occurs in almost 90% of the tokens.

	verb order in address formula		verb order in other contexts	
	1-2	2-1	1-2	2-1
Brabants	13 (100.0%)	0 (0.0%)	11 (26.2%)	31 (73.8%)
Drents	35 (100.0%)	0 (0.0%)	7 (15.2%)	39 (84.8%)
Utrechts	60 (93.8%)	4 (6.2%)	2 (1.9%)	102 (98.1%)
Total	138 (97.2%)	4 (2.8%)	20 (10.4%)	172 (89.6%)

Table 4.1: verb order in two-verb clusters with *zullen* in address formulas versus in other contexts, 14th century charters

Various explanations may be invoked to account for the contrast in table 4.1. It could be argued that the widespread use of 1-2 order in formulas is archaic. In other words, these formulas may reflect an earlier stage in the grammar in which the 1-2 order was more common. An alternative explanation may be that formulas are copied from similar texts in other dialect areas where 1-2 is the dominant order. The fact that the same contrast is present in three areas that are relatively far apart argues in favour of the first hypothesis. This is corroborated by the existing studies of Middle Dutch verb order. Coussé (2008) for example, investigating clusters with *zullen* in texts from Holland and Brabant, reports a sharp decline of 1-2 orders in the course of the 13th and 14th

centuries.¹⁴ Thus, the 1-2 order was probably an archaic variant for (part of) the 14th C. language community, which may have survived longer in fixed expressions like the one discussed here. If we take into account Marynissen's (1999) findings, however, it seems that contact between dialect areas has also played a role and that both explanations should actually be combined: the 1-2 order in the address formula is likely a relic from an older (southern) writing tradition.

Regardless of the explanation for this particular finding in 14th C. charters, this example emphasises the need to exclude tokens from the data counts that are obviously formulaic phrases, in order to prevent the data from being corrupted.

4.3 Impact of variables

The following sections discuss the impact of three variables on verb order in our 14th to 16th C. data: auxiliary, time and dialect.

4.3.1 Variable auxiliary

Two very frequent auxiliaries have been investigated. The first one, *hebben* ('have'), is typically complemented by a past participle. The second one, *zullen* ('shall'), always takes an infinitive as its complement. The order variation with both auxiliaries is given in table 4.3.

¹⁴ There is a small overlap between the 14th century data in Coussé (2008) and mine. She has investigated texts from Holland, Flanders and from Brabant in CRM. Our results from Breda are probably part of her 'Brabant' data.

		Order		Total
		1-2	2-1	
auxiliary	<i>hebben</i>	253 (4.9%)	4962 (95.1%)	5215
	<i>zullen</i>	670 (22.7%)	2279 (77.3%)	2949
Total		923 (11.3%)	7241 (88.7%)	8164

Table 4.3: cross-tab auxiliary*verb order in two-verb clusters; Pearson $\chi^2=599.780$ (df=1); $p<.001$

The difference between *hebben* and *zullen* is significant. Both auxiliaries prefer 2-1 verb order, but *zullen* also occurs fairly regularly before the main verb, with the reverse order 1-2. This result corresponds to earlier findings from the same period. De Meersman (1990) for example, investigating southern texts from the 13th to the 16th century, also observes that 1-2 order is more common in clusters with an infinitive than in clusters with a past participle.

Since the data for *zullen* is rather different from the data for *hebben*, I will treat both auxiliaries separately in the following sections.

4.3.2 Variable time

It has been mentioned in the previous sections that both verb orders have existed from the beginning of the vernacular writing tradition. The distribution between the two orders, however, fluctuates over the centuries. Our database, constructed in such a way that there are attestations of *hebben* and *zullen* from different time slices, provides insight in the diachronic development of verb order in two-verb clusters with these auxiliaries. As a first rough measure of the time dimension, the data has been divided in three groups according to the century it was produced in: 14th, 15th or 16th. The distribution of verb order with *zullen* in these three centuries can be observed in table 4.4.

		Order with <i>zullen</i>		Total
		1-2	2-1	
century	14 th	20 (10.4%)	172 (89.6%)	192
	15 th	410 (20.1%)	1627 (79.9%)	2037
	16 th	240 (33.3%)	480 (66.7%)	720
Total		670	2279	2949

Table 4.4: cross-tab century*verb order in two-verb clusters with *zullen*;Pearson $\chi^2=70.542$ (df=2); $p<.001$

Table 4.4 suggests that *zullen*-clusters experienced a steady rise of the 1-2 order. The Pearson Chi Square test tells us that the difference between the three centuries is significant. A more detailed time table that will be given below, however, shows that the reality is slightly more complicated: while the overall picture suggests only a rise, the 1-2 order actually follows a fall-rise pattern.

Before turning to this detailed picture, let us consider the impact of the factor century on verb order in clusters with *hebben*.

		Order with <i>hebben</i>		Total
		1-2	2-1	
century	14 th	46 (15.6%)	249 (84.4%)	295
	15 th	166 (4.4%)	3570 (95.6%)	3736
	16 th	41 (3.5%)	1143 (96.5%)	1184
Total		253	4962	5215

Table 4.5: cross-tab century*verb order in two-verb clusters with *hebben*;Pearson $\chi^2=80.035$ (df=2); $p<.001$

The time factor is also significant for *hebben*-clusters. If only the 15th and the 16th centuries are compared, however, the difference is not significant anymore (Pearson $\chi^2=2.144$; $p=.143$). This suggests that there is an increase of the 2-1 order in *hebben*-clusters, after which these clusters remain predominantly 2-1 throughout the 15th and 16th centuries.

The question now is whether these hypotheses are confirmed when we look at the gradual development of both *hebben*-and *zullen*-clusters, i.e. when the time dimension is plotted in more detail. Table 4.6 shows the order variation in two-verb clusters, divided by auxiliary and in time slices of 20 years.

	Order with <i>hebben</i>		Order with <i>zullen</i>	
	1-2	2-1	1-2	2-1
1300-1319	8 (53.3%)	7 (46.7%)	2 (28.6%)	5 (71.4%)
1320-1339	8 (61.5%)	5 (38.5%)	4 (21.1%)	15 (78.9%)
1340-1359	12 (20.3%)	47 (79.7%)	3 (6.7%)	42 (93.3%)
1360-1379	13 (11.8%)	97 (88.2%)	7 (17.9%)	32 (82.1%)
1380-1399	5 (5.1%)	93 (94.9%)	4 (4.9%)	78 (95.1%)
1400-1419	12 (2.9%)	399 (97.1%)	30 (8.0%)	345 (92.0%)
1420-1439	29 (3.3%)	846 (96.7%)	67 (15.2%)	395 (84.8%)
1440-1459	57 (6.2%)	867 (93.8%)	117(23.9%)	372 (76.1%)
1460-1479	63 (7.1%)	823 (92.9%)	148 (34.0%)	287(66.0%)
1480-1499	5 (0.8%)	625 (99.2%)	48 (16.2%)	248 (83.8%)
1500-1519	6 (3.3%)	178 (96.7%)	42 (21.6%)	152 (78.4%)
1520-1539	5 (1.6%)	299 (98.4%)	67 (31.6%)	145 (68.4%)
1540-1559	19 (3.3%)	565 (96.7%)	80(38.8%)	126 (61.2%)
1560-1579	8 (11.0%)	65 (89.0%)	20 (27.8%)	52 (72.2%)
1580-1599	3 (7.7%)	36 (92.3%)	31 (86.1%)	5 (13.9%)
Total	253	4962	670	2279

Table 4.6: verb order divided by auxiliary and in time slices of 20 years.

The figures above confirm our hypothesis for *hebben*: while the data from the first two slices of the 14th century is too sparse to allow any solid claims about the diachronic development of verb order, there is clearly a rise of the 2-1 order

after 1340. At the turn of the century, the order stabilizes around 95%, and this remains stable during the two centuries that follow. Only the last two time slices (1560-1599) suggest a slight decline of the 2-1 order.

The data for *zullen* show that the observed rise of the 1-2 order was preceded by an increase or decrease in frequency of this order in the course of the 14th C., although this hypothesis is founded on a rather low number of tokens in the first half of the 14th C. After 1400, there is some fluctuation, but the 1-2 order is clearly on the rise. Remarkably enough the last time slice (1580-1599) displays a sudden dominance of the 1-2 order.

To sum up, the 2-1 order gains frequency towards the end of the 14th century, both with *hebben* and *zullen*. Throughout the 15th and 16th centuries, 2-1 remains the dominant order. Especially *hebben*-clusters prefer this order. There is more variation in *zullen*-clusters, and the overall picture suggests that the 1-2 order increasingly replaces the 2-1 order in this cluster type. This is in line with previous claims (e.g. Coussé 2008, Coupé & Coussé 2008) that a process of linguistic change takes place in the period under discussion. The 2-1 order is almost categorical around 1400 AD, but the reverse order 1-2 is on the increase in the centuries that follow. *Zullen* seems to precede *hebben* in this development.

This may signal the beginning of the change that eventually led to the 1-2 order in Present-day Dutch infinitive clusters. There are some important dialect differences, however, which will be discussed in the next section.

4.3.3 Variable dialect

The Brabants dialect has been the subject of previous research. The data from Utrechts and Drents on the other hand provide new material, since late Middle Dutch verb order has not been investigated before in these dialects. The impact of the factor dialect on clusters with *zullen* is visible in table 4.7.

	Order with <i>zullen</i>		Total
	1-2	2-1	
Brabants	320 (36.1%)	566 (63.9%)	886
Drents	323 (24.6%)	990 (75.4%)	1313
Utrechts	27 (3.6%)	723 (96.4%)	750
Total	670	2279	2949

Table 4.7: cross-tab dialect*verb order in *zullen*-clusters; Pearson $\chi^2=249.377$ (df=2); $p<.001$

The texts from Brabant have the largest percentage of 1-2 clusters, while the texts from Utrecht almost exclusively have 2-1 order. Drents is somewhere in the middle between the other two dialects. The factor dialect is significant according to the Pearson Chi-Square test.

	Order with <i>hebben</i>		Total
	1-2	2-1	
Brabants	173 (16.6%)	869 (83.4%)	1042
Drents	76 (2.1%)	3531 (97.9%)	3607
Utrechts	4 (0.7%)	562 (99.3%)	566
Total	253	4962	5215

Table 4.8: cross-tab dialect*verb order in *hebben*-clusters; Pearson $\chi^2=391.640$ (df=2); $p<.001$

If we look at clusters with *hebben* in the table above, it turns out that the pattern is rather comparable to our findings with *zullen*. The differences between the dialects are smaller, but still significant. Brabants 'leads' in terms of 1-2 orders, Utrechts has 2-1 in almost all the cases. Drents is again in the middle. This time it is closer to Utrechts, but if calculated separately, the difference between Drents and Utrechts is still significant (Pearson $\chi^2=5.102$ (df=1); $p<.05$).

The facts in tables 4.7 and 4.8 show that the dialects are remarkably coherent in terms of their restrictions on verb order. Utrechts has a clear preference for the 2-1 order in both cluster types, although this preference is

stronger in *hebben*-clusters. Brabants has more variation, but again the 2-1 order is more dominant in *hebben*-clusters than in *zullen*-clusters. The largest difference between both auxiliaries is found in Drents. The remainder of this section will show that Drents after 1500 shows a remarkable rise of the 1-2 order in *zullen*-clusters, but not in *hebben*-clusters.

In order to visualise the diachronic development in each dialect, I have plotted the share of 1-2 orders over time, separated by dialect. Figure 4.1 shows the plot for *zullen*-clusters.

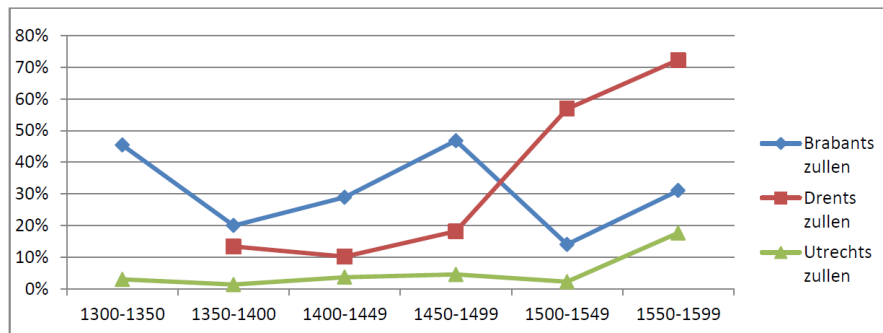


Figure 4.1: percentage of 1-2 order in two-verb clusters with *zullen*

Judging by figure 4.1, the 14th C. decline of the 1-2 order that was discussed in the previous section is primarily due to the Brabants data. Unfortunately there is hardly any material from Drenthe in the decades between 1300 and 1350, so it is uncertain whether Drents also had a decline of the 1-2 order in this period. The Utrechts data shows no evidence of a decline of the 1-2 order. This dialect apparently already had a stable 2-1 grammar at the beginning of the 14th C.

It was shown in the previous section that the data after 1400 shows a steady increase of the 1-2 order in *zullen*-clusters. Figure 3.2 shows that this overall rise is primarily due to a sharp rise in the Drents dialect. The Brabants data also shows a rise of the 1-2 order in the 15th C., but after 1450 the share of the 1-2 order drops again and fluctuates between 15% and 30% in the 16th C. This drop may however be related to the construction of the corpus. The size of

the 15th part of the Brabant corpus is considerably larger than that of the 16th C part. But more importantly, two different sources have been used for this corpus (Cerutti 1972 and Bezemer 1892). The drop in 1-2 order begins at the source from the 16th C., which suggests that there may be a difference in genre or writing traditions between both sources.

Verb order in Utrechts is remarkably stable (almost exclusively 2-1) across the centuries, except in the last time slice, where the 1-2 order rises to around 18%. The rigid and stable use of the 2-1 order we found in the Utrechts corpus data to my knowledge has never been found in previous dialect studies. De Meersman (1990:178-179) for example, investigating Flemish and Brabants texts from the 13th to the 16th C., reports that 1-2 is never completely marginal.

With *hebben*, the situation is somewhat different, as can be seen in figure 4.2.

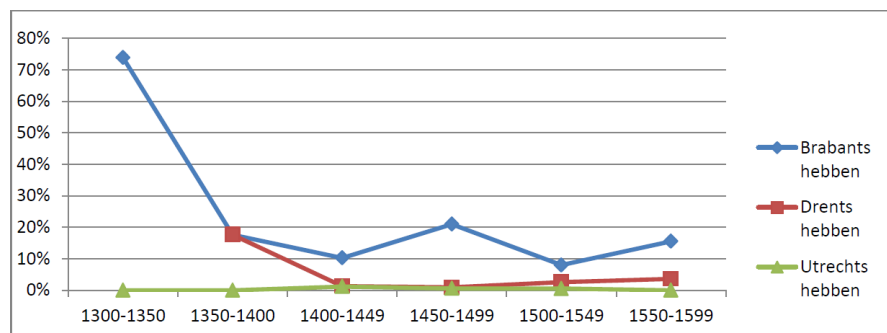


Figure 4.2: percentage of 1-2 order in two-verb clusters with *hebben*

Figure 4.2. shows that both Brabants and Drents underwent a drop of the 1-2 order in the 14th C. It should be noted that the extremely high percentage in Brabants in the first half of this century is perhaps unreliable, since it is based on a rather low number of tokens (23). However, the results fit in with other studies of Brabants (De Meersman 1990, Burridge 1993, Coussé 2008) that also report a high frequency of the 1-2 order in the early 14th century. Around 1400 the frequency of the 1-2 order is 10% or less in all three dialects. After 1400, Breda is the only dialect with a considerable share of 1-2 orders (oscillating

between 10 and 20%). Clusters with *hebben* are predominantly 2-1 in the 15th and 16th texts from Drenthe. Utrecht, finally, is the only dialect that exhibits almost exactly the same pattern in *hebben*-clusters as in *zullen*-clusters.

4.4 Discussion

As shown in the previous sections, verb order variation in two-verb clusters basically boils down to the choice between two variants, both of which exist in different types of verb clusters throughout the centuries, but in varying frequencies. The Brabants dialect between 1300 and 1600 witnesses a fall and a subsequent rise of the 1-2 order in *zullen*-clusters, after which the frequency of the 1-2 order fluctuates. Coussé (2008), relying on her own findings as well as data gathered by De Meersman (1990) and Burridge (1993), also observes a fall-rise pattern not only in Brabants but also in the dialects of Flanders and Holland. A similar rise of the 1-2 order occurs in our Drents data, but slightly later than in Brabants. Utrechts, finally, has 2-1 order throughout the centuries except in the last time slice. Clusters with *hebben*, on the other hand, show a decline of the 1-2 order in the 14th C in Brabants and Drents. This observation again is confirmed by Coussé's (2008) results for the dialects of Brabant, Flanders and Holland. After 1400, however, the dominant order in *hebben*-clusters remains 2-1 in all the time slices and in all three dialects.

The question now is how these diachronic developments and dialect differences should be interpreted. First of all, the fact that the 2-1 order evolves into an almost exclusive variant around 1400, both in *hebben*- and in *zullen*-clusters, calls for an explanation. Selection of this order takes place in different areas and with different auxiliaries at the same time. Such an overall change may be the result of a change in the actual spoken language, but given that there was contact between the scribes of different writing centres (e.g. Berteloot 1995, Marynissen 1999, Goossens 2000), there is the possibility that it reflects the rise of an early written standard. Recall from section 4.3, however, that it was the opposite order 1-2 that was used in highly conventional formulaic clauses, even when the 2-1 order was already on the

rise. Therefore it is unlikely that the rise of 2-1 would be a matter of writing convention. Many of 13th and 14th C. writing conventions moreover have been proved to be of Flemish origin (e.g. Van Loey 1980, Van den Toorn et al. 1997). Not the dialect of Flanders, but the dialect of Holland precedes those of Brabant and Flanders in the development towards 2-1, which according to Coupé and Coussé (2008) argues against an account that is based on writing standards alone.

On the assumption that there is a language-internal explanation for the rise of the 2-1 order in the 14th C., the question remains what this explanation might be. One possible explanation is that the fixing of word order in the verb cluster may be related to the fact that the relative order of object and verb becomes more fixed in roughly the same period. This fits with typological explanations for word order changes, also known as typological universals, proposed by historical linguists. A well-known typological universal is that the order of object and verb correlates with the internal order of the verbal complex, i.e. the order of main verb and auxiliary. This claim was made first by Greenberg (1966) in his so-called “universal 16”:

In languages with dominant order VSO, an inflected auxiliary always precedes the main verb. In languages with dominant order SOV, an inflected auxiliary always follows the main verb. (Greenberg 1966: 85)

Dryer (1992) reformulates many of Greenberg’s universals as statistical rather than absolute correlations. The correlation between the order of main verb and auxiliary and the relative order of object and verb in his work is phrased as follows:

[...] auxiliary verbs tend to follow the content verb in OV languages and to precede it in VO languages. (Dryer 1992: 100)

Verb order changes might thus be indicative of a broader typological shift in Dutch grammar. The argumentation underlying such typological explanations is that word order change is triggered by a tendency towards typological harmony, or, as Hawkins (1979:620) puts it: ‘at each stage in their historical evolution, languages remain consistent with synchronic universal implications’. The motivation of word order change may thus simply be to ‘resolve disharmony’. The typological hypothesis then would rely on the assumption that Middle Dutch was increasingly becoming more ‘OV’. Although VO ‘leakages’ are quite common in early Middle Dutch and gradually disappear in the centuries that follow (e.g. Gerritsen 1978, 1984, Cloutier 2009), it is by no means widely recognised that Dutch was undergoing a structural change with regard to object-verb order in this period.

Coussé (2008) does find a correlation between placement of the direct object to the right of the verb and 1-2 verb order in clauses that contain a two-verb cluster with a participle, at least in 13th and 14th C. Dutch. She argues that object extraposition was a way to mark the object for focus in Middle Dutch. The concomitant 1-2 order patterns according to Coussé result from the desire to make the focused direct object and the main verb (i.e. the participle) adjacent. The grammatical option to extrapose a focused object eventually gets lost, which, if the principle of adjacency is maintained, would lead to a decline of 1-2 verb order as well. This explanation is put forward by Coussé in order to account for the decline of 1-2 order in participle clusters only, probably because she finds that the correlation between VO and 1-2 order does not hold for clusters with an infinitive. Nevertheless, the decline of (focus-related) VO-patterns may be a language-internal factor that promotes the use of 2-1 order, if we assume that the complementation direction within the verb cluster to some extent mirrors the complementation direction within the VP, even when this correlation does not hold for each separate clause.

The more diffuse situation in the 15th and 16th C. is even harder to explain straightforwardly. *Zullen*-clusters seem to set out on a gradual process of linguistic change that leads up to the almost exclusive use of the 1-2 order in

Present-day Standard Dutch. We obviously need evidence from the period after 1600 to support this claim. This evidence is provided in Coussé (2008): according to her data the 1-2 order in *zullen*-clusters keeps rising gradually in the centuries that follow. She reports that the texts from Holland are slightly ahead of those from Brabant and Flanders in this long-term development. The present study does not provide any information about the Hollands dialect. The nearest dialect is Utrechts, which, perhaps unexpectedly, is more conservative than the other dialects that have been studied. The remotest dialect, Drents, on the other hand, has the highest amount of 1-2 orders in the 16th century. This is also surprising since the northeast turns out to be a homogeneous 2-1 area in many synchronic dialect studies (e.g. Pauwels 1953, Stroop 1970, Barbiers et al. 2008).

The syntactic behaviour of the other auxiliary, *hebben*, is stable throughout the 15th and 16th C. Judging from our data, there is no reason to assume that a similar change towards the 1-2 order took place in *hebben*-clusters. Again, the findings of Coussé (2008) complete the data that is presented here. *Hebben*-clusters do experience a rise of the 1-2 order, but it starts later (around 1550). As I have pointed out before, the outcome is also different. Both orders still compete in Present-day Dutch.

Coussé (2008:164) argues that the reintroduction of the 1-2 order may serve the discourse function that was lost with the decline of object extraposition, i.e. to mark the direct object for focus. This hypothesis is reminiscent of Sapp (2006), who also finds correlations between 1-2 order and focus on the preceding direct object. This scenario obviously does not explain the different development of *hebben* and *zullen* after 1400. A further problem for Coussé's theory is the fact that the 1-2 order was practically extinct around 1400 in two of the three regions she investigates. The question then is whether there was enough linguistic evidence for language users to reinterpret the 1-2 order as a focus marked variant. Coussé solves this theoretical problem by assuming that the change initially took place only in the Brabants dialect, and that the introduction of the 1-2 order as a focus marked variant in the other

two regions (Vlaanderen and Holland) is the result of language contact with Brabant (diffusion).

4.5 Conclusion

We have seen in our corpus study and in other studies of Middle Dutch corpora that two-verb clusters with *hebben* and *zullen* after an initial period of variation almost categorically have the 2-1 order around 1400. In the centuries that follow, two-verb clusters with *zullen* show a rise in 1-2 order at different rates in different dialects. The outcome of this process of long-term linguistic change is visible in Present-day Standard Dutch: *zullen*-clusters are now almost categorically 1-2. Clusters with *hebben* and a past participle experience a similar rise, but it sets off later (around 1550) and it is never really completed: two-verb clusters with *hebben* still display considerable variation between both orders in Present-day Dutch. The 1-2 order is currently seen as a register variant rather than an innovation that is still in the process of replacing the ‘old’ 2-1 order (e.g. De Sutter 2005).

So far, no satisfactory explanation has been proposed for the rise of the 1-2 order in two-verb clusters with *zullen* (and, to a lesser extent, with *hebben*) from 1400 onwards. The next chapters will propose some new perspectives on the development of Dutch verb clusters. In order to fully understand the verb order changes in two-verb clusters, it will be argued, we need to elaborate on the development of longer verb clusters. We will see that the increase in frequency of long verb clusters in late Middle Dutch, which have an inherent tendency to put the auxiliary first, is a factor that may help to explain the rise of the 1-2 order in two-verb clusters.

Chapter 5 – Order variation in long verb clusters

5.1 Introduction

The previous chapter has provided an overview of order variation in two-verb clusters in our Late Middle Dutch data. We discussed some factors that influence verb order in these clusters: dialect, time and auxiliary. This chapter explores the effect of these factors on verb order in clusters of three and more verbs, using the same data set. Comparing the variation in longer verb clusters to the variation found in two-verb clusters, I will show that longer verb clusters tend to have 1-2 order throughout the period covered by our corpus. An equally important finding is that long verb clusters gain frequency over the centuries, which leads to an increase of contexts where the 1-2 order is favoured. I will argue that this may have triggered language users to start using this verb order in other contexts as well, and therefore may be a factor explaining the observed rise of the 1-2 order in two-verb clusters.

The data discussed in this chapter will show that Late Middle Dutch dialects allow for a number of auxiliary combinations, yielding different cluster formats or syntagms. We have seen in chapter two that three-verb syntagms in which a perfective auxiliary takes another auxiliary as its verbal complement, may display the IPP-effect: the second auxiliary then occurs as an infinitive rather than as a past participle. The example below illustrates that this phenomenon already occurs in our Late Middle Dutch data set.

- (1) *dat sie Alberte bynnen vi wecken hebn¹ laten² wetten³ dat*
 that they Albert within 6 weeks have let.INF know that
geen uutbuyr wairdel in oere marcke copen² mochte¹
 no outsider share in their territory buy may.SBJV
 ‘that they have let Albert know that no outsider could buy a share in
 their territory within six weeks’ (Drents, 1480)

The discussion of the IPP-effect in this chapter will be confined to the internal order of the verbs in IPP-clusters. We will return to the IPP-effect in chapter 7, where this phenomenon and its diachronic development will be discussed in more detail.

Section 5.2 presents the various three-verb syntagms that occur in the data set. The impact of the variables auxiliary, syntagm, time and dialect will be measured in section 5.3. Clusters of four and more verbs will be dealt with in 5.4. We will conclude from these sections that the number of verbs in the cluster has a strong impact on the order of the verbs in the cluster. As we will discuss in 5.5., the correlation between verb order and cluster length is not only present in Late Middle Dutch, but applies across West-Germanic languages and dialects. I will propose two principles that account for different verb orders in short and long verb clusters in section 5.6 of this chapter.

5.2 Three-verb clusters in the data set

As described earlier, I have compiled a data set from Late Middle Dutch corpus texts which contains more than 9253 subclauses, each of which contains a finite instance of either perfective *hebben* ‘have’ or modal/future *zullen* ‘shall’. Of these subclauses, 1010 have a three-verb cluster: 868 with finite *zullen* and 143 with finite *hebben*. These include only cases where the auxiliary in the complement of *zullen* or *hebben* selects a bare infinitive (e.g. *mogen* ‘may’ or *laten* ‘let’) or a past participle (e.g. *hebben* ‘have’, *worden* ‘become’ and *zijn* ‘be’). Cases in which the second auxiliary selects an infinitive with *te* ‘to’ are excluded from these counts since the behaviour of such verb combinations differs from that of ‘proper’ verb clusters (see also chapter 2 and *passim*).

5.2.1 Different orders

The verbs in a three-verb cluster can logically be put in six different orders: 1-2-3, 1-3-2, 2-1-3, 2-3-1, 3-1-2 and 3-2-1. All these orders are attested in our database, both with *hebben* and *zullen* as the hierarchically highest verb. As an

introduction, I will illustrate each of these six verb order patterns with a corpus example.

To begin with, the strictly right-branching order 1-2-3 is quite frequent in various syntagms. The finite form of *zullen* in the example below is complemented by a modal infinitive *mogen* ‘may’ and the main verb *bernen* ‘burn’.

- (2) *Item dat men bynnen oft buyten mercten egeen silver en*
 Likewise that one inside or outside markets no silver NEG
sal¹ moghen² bernen³ dan coninx-sylver
 shall may.INF burn than kings-silver
 ‘Likewise (it is decided) that one shall not be allowed to burn any silver
 inside or outside the markets other than the King’s silver’
 (Brabants, 1550)

Example (3) below illustrates the order 1-3-2. *Hadn* is the past third person singular of perfective *hebben*. It has in its complement the auxiliary *heten*, which in Middle Dutch had a causative meaning ‘make, command’. This is the only instance in our data set of the verb *heten* used as a causative auxiliary, but this use is furthermore documented in reference works like *Middelnederlandsch Woordenboek* (MNW) and the *Woordenboek der Nederlandsche Taal* (WNT). *Heten* does not occur as a participle but as an infinitive, due to the IPP-effect. *Heten* in turn is complemented by the main verb *haelen* ‘fetch’.

- (3) *dat om Ludekens wijff ende sonne dat gelt hadn¹ haelen³*
 that him Ludeken’s wife and son the money had fetch
heten²
 make.IPP
 ‘that Ludeken’s wife and son had made him fetch the money’
 (Drents, 1460)

The next order, 2-1-3, does not exist in three-verb clusters in Present-day Dutch dialects (e.g. Barbiers 2005b, see also the discussion in chapter 2). An apparent 2-1-3 order does occur frequently in in our Late Middle Dutch texts (much like in Present-day Dutch) when the most embedded verb is a *te*-infinitive, as in the example below.

- (4) *overmidts dat wij dit aldus denselven onsen neve*
 because that we this thus the-same our cousin
bevolen² hebben¹ te doen⁽³⁾
 ordered.PTCP have to do
 'because we have thus ordered our aforementioned cousin to do this'

Such constructions with a *te*-infinitive, however, are regarded as two-verb clusters with an extraposed clausal complement rather than as true three-verb clusters, hence the superscript 3 between brackets. It has been assumed by various scholars that the 2-1-3 order is impossible for proper three-verb clusters in the grammar of West-Germanic languages (e.g. Barbiers 2005b, Wurmbrand 2007). Nevertheless, our data set contains two attestations of this order without a *te*-infinitive, which we will both discuss here. One of these is given in (5). The first one occurs in a 16th century text from Drenthe and involves a combination of *hebben*, the past participle of causative *doen* 'do', and a bare infinitive main verb.

- (5) *gelyck sy dat voirtytz tVullenhaue gedaen² hebben¹*
 like they that formerly to-Vullenhave done have
verfolgen³
 continue
 'as they have formerly made that continue at Vullenhave'

Note that this is a context where the IPP-effect is expected, but it does not occur. Schmid (2005: 46) and Zwart (2007) cite some examples from German dialects that are structurally similar to the one in (5): 2-1-3 order without IPP. They argue that the absence of the IPP-effect suggests that such cases should probably not be analysed as proper three-verb clusters. We will come back to this analysis in chapter 7.

The second instance of the rare ordering pattern 2-1-3, given in (6), is more problematic. It has *zullen* as the first auxiliary, complemented by aspectual *comen* ‘come’ and the main verb *woenen* ‘live’. A complicating factor is that the three-verb cluster is coordinated with a two-verb cluster, which is the periphrastic perfect of *comen* ‘come’ conjugated with *sijn* ‘be’. It is unclear whether *woenen* is also the ellipsed complement of *comen* in the first part of the conjunct, especially because the surface form *comen* is ambiguous between an infinitive and a past participle. If ellipsis is indeed involved, the first cluster could be analysed as a non-IPP construction with *sijn* ‘be’, *comen* ‘come’ and a silent third verb *woenen* ‘live’, rather similar to the construction in (5) above. With only this example at our disposal, it is hard to determine whether *zullen*-clusters could also occur with 2-1-3 order in isolation (i.e. without a coordinated perfect tense).

- (6) *Soe wie uter heerlicheyt van Dongen tot Oosterhout comen² sijn¹*
 so who from-the manor of Dongen to Oosterhout come are
(?woenen³) oft van nu vordaen comen² sullen¹ woenen³ ...
 or from now on come shall live
 ‘Whoever have come (or have come to live?) from the manor of Dongen
 to Oosterhout or will from now on come to live (in Oosterhout)’
 (Brabants, 1440)

Another less frequent ordering pattern, i.e. 2-3-1, is illustrated in the next example, in the second conjunct of the clause. The highest verb is again a form of *hebben* ‘have’, complemented by the causative IPP-verb *laten* ‘let’ and the

main verb *doen* ‘do’. This is quite a common order in Present-day Dutch dialects, but only for clusters displaying the IPP-effect and especially in southern Dutch dialects (e.g. De Schutter 1995, 2000; Zwart 1995; Barbiers 2005b). The results of this study will show that these geographical and structural restrictions did not exactly apply to the 2-3-1 order in Late Middle Dutch dialects, but also that it was rather infrequent in these dialects.

- (7) *ende want zy dan dat cleijn zegell offgedaen heeft of*
 and because she than the small seal off-done has or
of laten² doen³ heeft¹
 off let-IPP do has
 ‘and because she has then taken off or made take off the small seal’
 (Utrechts. 1470)

The 3-1-2 order, another frequent pattern which is still very common in Present-day Dutch, is illustrated in (8). Finite *zullen* is complemented by the passive auxiliary *worden*, which has the participle of *kiezen* ‘choose’ in its complement.

- (8) *Item die nu ende tot anderen tyden bode*
 Likewise whom now and until other times messenger
gecoren³ sel¹ worden²
 chosen.PTCP shall become.INF
 ‘Likewise he who shall be chosen (to be) messenger now and until other times’ (Utrechts, 1520)

Example (9), finally, illustrates the strictly left-branching order 3-2-1. This example also has *zullen* as the finite verb, complemented by passive *worden*. The main verb is the participle of *copen*, ‘buy’.

- (9) *dat vierendeel van den alingen koorne, dat aldus*
 the quarter of the total corn that thus
gecoft³ warden² sall¹
 bought.PTCP become.INF shall
 ‘the quarter of the total (amount of) corn, that will be bought thus’
 (Utrechts, 1420)

The frequencies of these orders differ substantially, and they also depend on a number of different factors, as we will discuss further in this chapter.

5.2.2 Different intermediate auxiliaries

Leaving aside verbs that select a *te*-infinitive, 17 different auxiliaries have been found in the complement of the finite instances of *hebben* and *zullen*, many of which occur under both auxiliaries. In order to structure this very diverse set of data, I have divided these intermediate auxiliaries into categories according to the auxiliary types as discussed in chapter 2.. The following is an overview of verbs occurring as an intermediate auxiliary under *hebben*, under *zullen* or under both, classified according to the usual morphosyntax of their complement (infinitive or participle) and the auxiliary type.

Complement	Auxiliary type	Verbs attested as an intermediate auxiliary in the data set
infinitive	modal	<i>kunnen</i> ‘can’, <i>moeten</i> ‘must’, <i>mogen</i> ‘may’, <i>willen</i> ‘want (to)’, <i>dorren</i> ‘dare’, <i>dorven</i> ‘need (to)’
	causative	<i>doen</i> ‘do, make’, <i>heten</i> ‘make, order’, <i>laten</i> ‘let, allow’
	aspectual	<i>blijven</i> ‘stay, remain’, <i>komen</i> ‘come’
	benefactive	<i>helpen</i> ‘help’
	perception	<i>horen</i> ‘hear’
	evidential	<i>dunken</i> ‘appear (to someone)’
participle	perfective	<i>hebben</i> ‘have’, <i>wezen</i> ‘be’, <i>zijn</i> ‘be’
	passive	<i>worden</i> ‘become’, <i>zijn</i> ‘be’

Table 5.1: verbs occurring in the data set as an intermediate auxiliary (Aux2) under *hebben* and/or *zullen*, divided by auxiliary type

Most Middle Dutch auxiliaries straightforwardly fit into one of the categories in Table 5.1, but a few are more difficult to classify. Present-day Dutch *durven* (‘dare’), for example, is not always regarded as a modal verb (e.g. Haeseryn et al. 1997:1010-1011). Its ancestor in Middle Dutch, *dorven*, which is traditionally regarded as a modal verb meaning ‘need (to)’, started to be confused with the Middle Dutch verb *dorren* ‘dare’, presumably because both verbs had the same form for the past tense: ‘*dorst*’. Eventually, *dorren* became obsolete and *durven* adopted the meaning ‘dare’ (WNT). Following Duinhoven (1997:392-397), I consider both *dorven* and *dorren* as modal auxiliaries.

Another remarkable case is *dunken* ‘appear (to someone)’, which typically takes an indirect object acting as an experiencer. It is invariably followed by a *te*-infinitive or a *that*-subclause in Present-day Dutch, but it could take a bare infinitival complement in Middle Dutch¹⁵. These cases consistently involve raising of the subject of the embedded clause, so that it becomes the

¹⁵ For an elaboration on the use or lack of *te*-infinitives in Middle Dutch, see Duinhoven (1997:377-379).

subject of *dunken* itself. *Dunken*, together with other verbs denoting evidentiality such as *lijken* and *schijnen* (both meaning ‘seem’ or ‘appear’) is classified under a subcategory of modal auxiliaries in the *Algemene Nederlandse Spraakkunst* (Haeseryn et al. 1997:1007-1009). Since *dunken* is the only verb from this category in our database, I have placed it under a separate heading ‘evidential’. An example will be given further in this chapter.

Finally it should be noted that Haeseryn et al (1997:1018) consider the permissive use of *laten* as a separate category. Since it is often difficult to determine whether a corpus example is permissive or causative, and since the permissive may be argued to be a somewhat bleached version of the causative, I have included these permissive instances of *laten* in the category of causative auxiliaries.

5.2.3 Different syntagms

The term *syntagm* is used for any combination of either *hebben* or *zullen* (*Aux1*) with any type of intermediate auxiliary (*Aux2*), for instance modal, causative or perfective. Grouping the verbs as described in the previous section, there are 13 different syntagms in our data set. Each of these will be illustrated with a corpus example, some of which are repeated from section 5.2.1. All the syntagms with *zullen* are numbered with a capital Z and a number index which refers to the second verb. The first syntagm, which I call Z1, is a combination of *zullen* with a perfective auxiliary. This a very frequent syntagm in our data set.

- (10) Syntagm Z1: *zullen* – perfective auxiliary – V
 INF PTCP

Corpus example:

Item zoe wanneer eenich geselle van den ambachte

Likewise so when any mate of the trade

voirseyt eenen leerjongen aengenomen³ zal¹ hebben²

aforementioned an apprentice recruited.PTCP shall have.INF

(11) Syntagm Z2: *zullen* – passive auxiliary – V
 INF PTCP

'Likewise he who shall be chosen (to be) messenger now and until other times' (Utrechts, 1520)

(12) Syntagm Z3: *zullen* – modal auxiliary – V
INF INF

(Brabants, 1550)

Another frequent combination is *zullen* with a causative auxiliary and an infinitive (Z4).

- (13) Syntagm Z4: *zullen* – causative auxiliary – V
 INF INF

Corpus example :

dat de schulte aldair de seckeren ende de bueren up enen
 that the bailiff there the witnesses and the villagers on an
benomeden dach bynnen 3 wecken voir um komen³ sal¹ laten²
 appointed day within 3 weeks before him come shall let.INF
 'that the bailiff shall let the witnesses and the villagers come before him
 there on an appointed day, within three weeks' (Drents, 1420)

The case of *dunken* 'appear (to someone)' was discussed earlier in this section. There are 10 tokens in our corpus with *dunken* as the second verb. These cases together represent syntagm Z5.

- (14) Syntagm Z5: *zullen* – evidential auxiliary – V
 INF INF

Corpus example:

alsoverre alst hem nae den coop van den cooren oft
 insofar as-it him after the purchase of the corn or
anderssints behoeffelijck ende van nooden sal¹ duncken² weezen³
 otherwise useful and of need shall seem.INF be
 'As far as it will seem (to be) useful and necessary to him after buying the
 corn or in any other circumstance' (Brabants, 1450)

Another less frequent syntagm is the one in which *zullen* selects an aspectual auxiliary, like *komen* 'come'.

- (15) Syntagm Z6: *zullen* – aspectual auxiliary – V
 INF INF

Corpus example:

oft hen deselve Artur yet wilt heysschen, dat hij dat
 if them this Artur something wants demand that he that
sal¹ comen² doen³ in de banc van Roesendale
 shall come.INF do in the court of Roosendaal
 ‘if this Arthur wants to demand something of them, that he shall come to
 the court of Roosendaal to do that’ (Brabants, 1460)

The last syntagm with *zullen* has the benefactive auxiliary *helpen* (‘help’) in its complement. There are only three instances of this syntagm.

- (16) Syntagm Z7: *zullen* – benefactive auxiliary – V
 INF INF

Corpus example:

Ende wes byer zy alsoe zellen¹ helpen² uutdragen³, daervan
 And what beer they thus shall help.INF carry out thereof
zellen zy hoeren gesetten loen nemen
 shall they their set wage take
 ‘And of the beer that they will thus help carry out, they will get their set
 wage’ (Utrechts, 1490)

The syntagms that are discussed below have *hebben* as the hierarchically highest verb. They are numbered with a capital H (for *hebben*) and a number index which refers to the type of the second auxiliary. With the exception of H1 and H2, both of which are quite infrequent, all the other syntagms are IPP-contexts. The first syntagm with *hebben* is illustrated in (17).

- Corpus example :

perfective auxiliary *hebben* is the finite verb in this syntagm, but it is also possible that another form of *hebben*, i.e. the participle *gehad*, occurs in this syntagm, which results in a construction with two participles. This kind of construction, called *perfect doubling* by Barbiers et al. (2008), has become obsolete in Present-day Standard Dutch but still survives in some Present-day Dutch dialects. All the examples in our database have *gehad* as the second verb.

I have coded this intermediate verb as another perfective auxiliary, as is also done with similar constructions in the Syntactic Atlas of Dutch Dialects (Barbiers et al 2008:51-52), although some scholars would not agree with this tag. Duinhoven (1997:346-348) for example contends that *gehad* in constructions like the one above is not a perfective. His argument is that it is simply impossible to stack two perfective auxiliaries. Instead, he argues that *gehad* is a possessively used main verb, and the other participle *gecoft* is an adjunct. This complementation pattern is a relic of an older stage where *hebben* was still a full verb, according to Duinhoven. If *hebben* occurred together with a participle at this stage, this participle fulfilled the function of an adjunct. In other words, example (24) would illustrate two stages of the grammaticalisation process of *hebben* in one clause. Koeneman, Lekakou and Barbiers (2011) also propose that auxiliary doubling as such does not exist. This construction according to them involves the perfect tense of a lexical *hebben* 'have', which takes an adjectival (small clause) complement. If we assume that auxiliarisation is a gradual process and there may be polysemy at any stage, it makes sense that a more functional and a more lexical use of *hebben* may be combined into one clause.

- ### Corpus example

Item daer twee huysen getymmert³ hebben¹ geweest² ende

Likewise where two houses built have been and

gestaen hebben op eenen gemeynen muere ...

stood have on a common wall

‘Likewise where two houses have been built and have a wall in common’

(Brabants, 1530)

This type of construction with a three-verb cluster containing two participles, is still common in Present-day German and is commonly referred to as ‘perfect of passive’. Present-day Dutch has a different construction to express the same semantic content. Whereas *worden* ‘become’ is the passive auxiliary for the present tense, *zijn* ‘be’ serves this function for the perfect tense. In other words, a perfect of passive in Dutch is expressed by a *two*-verb cluster (*zijn* with a past participle) instead of a three-verb cluster. Some Present-day Dutch dialects, however, still use the ‘German system’ (see Barbiers et al 2008). The low frequency of this perfect of passive construction in our corpus data suggests that the Late Middle Dutch dialects we have investigated perhaps had a mixed passive system. It is unclear at this point whether these five tokens are relics of an older stage where the perfect of passive construction was used more widely, or whether they are innovative.

Now let us turn to the syntagms in which *hebben* is complemented with an auxiliary that selects an infinitive. These syntagms, as we have seen, typically have the IPP-effect in Present-day Dutch. The first of these is a

- Corpus example:

‘(In the case) between the master Aleff Jobinge’s heirs and the villagers of Annen it is decided that, if those of Annen have refused to give master Aleff’s heirs a copy, they shall still do it.’ (Drents, 1550)

Even more frequent than syntagm H3 are IPP-clusters with a causative (H4). The innovative IPP-effect very likely starts with these causative verbs, as will be shown in chapter 7. H4 is the only syntagm where a single exception to the IPP-effect occurs, i.e., the intermediate auxiliary occurs as a past participle and not as an infinitive. This case was shown in example (5) above. The corpus example below illustrates the much more common construction *with* IPP.

- (20) Syntagm H4: *hebben* – causative auxiliary – V
 INF (IPP) / PTCP INF

Corpus example:

Intyrste vander vangenscap, dat de droste Johan Kevelynge

At-first of-the imprisonment that the judge Johan Kevelynge

hevet¹ vangen³ laten², is gewyst dat ...

has catch let.IPP is decided that

‘At first, about the imprisonment (i.e.) that the judge has put Johan

Kevelynge in prison, it is decided that...’ (Drents, 1400)

Our data set contains ten instances of the perception verb *horen* ‘hear’ in an IPP-cluster (H5). No other perception verbs have been found in this syntagm. All the attestations of this syntagm have the IPP-effect.

- (21) Syntagm H5: *hebben* – perception verb – V
 INF (IPP) INF

Corpus example:

dat zij Jan Wouterssoon hadden¹ hoeren² seggen³ dat Cornelis

that they Jan Wouterssoon had hear.IPP say that Cornelis

van Brande meyneedich was

van Brande perjurous was

‘that they had heard Jan Wouterssoon say that Cornelis van Brande was perjurous’ (Brabants, 1460)

Syntagm H6, finally, consists of *hebben* combined with benefactive *helpen* ‘help’. All the instances have IPP.

- (22) Syntagm B6: *hebben* – benefactive auxiliary – V
 INF (IPP) INF

Corpus example:

alsoe Joos van Daelhem, mijn wettich sone, onlanx geleden binnen
 as Joos van Daelhem my legal son recently past within
mijnre heerlijkheit van Dongha voirgen. wijlen Gheerit
 my manor of Dongen aforementioned late Gheerit
Kepken gequetst en van live ter doot heeft¹ helpen² brengen³
 Kepken wounded and from life to death has help.IPP bring
 ‘as Joos van Daelhem, my legal son, has recently wounded the
 aforementioned late Gheerit Kepken within my manor of Dongen and
 has helped to bring him from life to death, ...’ (Brabants, 1460)

5.2.4 Effects of grouping auxiliary combinations as syntagms

The discussion in the rest of this chapter will focus on syntagms rather than on separate auxiliary combinations. In most cases, the data show similar ordering patterns for different auxiliaries that are grouped together as a syntagm, although the number of cases is often too low to test this statistically. There are some exceptions, however. One case where different auxiliaries yield different results are syntagms with *wezen* versus syntagms with *zijn*. These verbs have the same meaning, i.e. ‘to be’. Both occur in our database as a passive and as a perfective auxiliary under *zullen*. Table 5.2 is an overview of verb order in such clusters.

Aux2 type	Aux 2	Order			
		1-2-3	1-3-2	3-1-2	3-2-1
passive	wezen	0 (0.0%)	7 (12.7%)	45 (81.8%)	3 (5.5%)
	zijn	8 (13.8%)	3 (5.2%)	47 (81.0%)	0 (0.0%)
perfective	wezen	1 (12.5%)	1 (12.5%)	6 (75.0%)	0 (0.0%)
	zijn	5 (38.5%)	1 (7.7%)	7 (53.8%)	0 (0.0%)

Table 5.2: Verb order in clusters with finite *zullen*, infinitive of *wezen/zijn* and a main verb participle

Although the dominant order in combinations of *zullen* with both *zijn* and *wezen* is 1-3-2, it can be observed that clusters with *zijn* have more 1-2-3 order than their counterparts with *wezen*, both in passive and perfective uses. *Wezen* and *zijn* are synonyms, and the choice between both verbs often depends on the dialect of the speaker, in which case the difference in verb order may be a side effect of the factor dialect. Table 5.3 shows that regional preferences indeed influence the choice between the two verbs. *Zijn* is more frequent in Brabants, whereas *wezen* is the preferred lexeme in Drents and especially Utrechts.

		Lexeme		Total
		wezen	zijn	
dialect	Brabants	17 (22.7%)	58 (77.3%)	75
	Drents	16 (66.7%)	8 (33.3%)	24
	Utrechts	30 (85.7%)	5 (14.3%)	35
Total		63	71	134

Table 5.3: cross-tab choice between the lexemes *wezen* and *zijn**dialect.

Pearson $\chi^2 = 42.611$ (df=2); $p < .001$.

A closer investigation of the 13 tokens of *zijn* with 1-2-3 order (and even the single token of *wezen* with 1-2-3 order) tells us that these are all from the Brabants dialect, which, as we will see further in this chapter, has more 1-2-3 order than the other two dialects across the board.

Something similar can be observed with *doen* and *laten*. Both are used as causative auxiliaries following *hebben* as well as *zullen*, in Late Middle Dutch as

well as in Present-day Dutch. Haeseryn et al (1997:1015ff) state that the causative auxiliary *doen* is used more often when the causal connection between two events is perceived as direct and inevitable, whereas *laten*, even when it is not used as a permissive but as a ‘proper’ causative verb, presents the causality as less strict and open to personal choice (see also Verhagen and Kemmer 1997). According to Verhagen (1994), this opposition already existed in earlier stages of the language. However, the choice between the two auxiliaries is also regionally conditioned, at least in Present-day Dutch. The southern dialects of Present-day Dutch make more extensive use of *doen* as a causative auxiliary, also in contexts where Present-day Standard Dutch speakers prefer *laten* (Haeseryn et al 1997:1020).

Table 5.4 provides evidence that *doen* is more frequent than *laten* in the Brabants dialect. Both auxiliaries are equally frequent in the Utrecht texts, while the texts from Drenthe show a clear preference for *laten*.

		Lexeme		Total
		doen	laten	
dialect	Brabants	46 (86.8%)	7 (13.2%)	53
	Drents	10 (13.3%)	65 (86.7%)	75
	Utrechts	8 (53.3%)	7 (46.7%)	15
Total		64	79	143

Table 5.4: cross-tab choice between the lexemes *doen* and *laten**dialect.

Pearson $\chi^2 = 68.276$ (df=2); $p < .001$.

If we look more closely at the data, it turns out that the 1-2-3 order is more frequent with *doen* than with *laten*: 94.1% versus 69.4% in *hebben*-clusters and 83.3% versus 56.7% in *zullen*-clusters. Again, the difference between *doen* and *laten* may be attributed to the fact that many tokens with *doen* are from Brabants. We will come back to the factor *dialect* in 3.5.4, where I will show that the Brabants dialect indeed has a greater preference for 1-2-3 verb order. The cases of *wezen/zijn* and *doen/laten* illustrate that the results, if anything,

become more reliable when auxiliaries are grouped in categories rather than discussed separately.

5.3 Impact of variables in three-verb clusters

5.3.1 Variable auxiliary

Table 5.5 shows the influence of the first auxiliary in the cluster on verb order, regardless of the syntagm it is in. The variable auxiliary is significant, although there are many similarities between the distribution of orders in *hebben*- and in *zullen*-clusters. Both categories have 1-2-3 and 3-1-2 as the most frequent orders, but *hebben*-clusters prefer 1-2-3 order whereas *zullen*-clusters more often have 3-1-2. Apart from that, the frequencies of the other verb orders are quite similar between the two auxiliaries *hebben* and *zullen*.

		Order						Total
		1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1	
Aux1	hebben	108 (75.5%)	11 (7.7%)	1 (0.7%)	3 (2.1%)	16 (11.2%)	4 (2.8%)	143
	zullen	383 (44.2%)	32 (3.7%)	1 (0.1%)	7 (0.8%)	436 (50.3%)	7 (0.8%)	866
Total		491	43	2	10	452	11	1009

Table 5.5: cross-tab Aux1*verb order in three-verb clusters; Pearson $\chi^2=79.941$ (df=5); $p<.001$

Now let us compare these results to those for the factor *auxiliary* in two-verb clusters. Verb order in two-verb clusters was defined in the previous sections as a two-way variable. I therefore divided the data in table 5.9 in two groups: a first group in which *hebben* or *zullen* precedes its immediate complement verb (i.e. 1 before 2) and a second group in which the hierarchically highest verb follows its immediate complement (2 before 1). The first group thus contains the 1-2-3, 1-3-2, and 3-1-2 orders, the second group consists of the remaining three patterns 2-1-3, 2-3-1 and 3-2-1. It is easy to see that the majority of the

data falls into the first category. Table 5.6 compares the factor auxiliary in two- and three-verb clusters.

	Order in two-verb clusters		Order in three-verb clusters	
	1-2	2-1	1-2	2-1
<i>hebben</i>	253 (4.9%)	4962 (95.1%)	135 (94.4%)	8 (5.6%)
<i>zullen</i>	670 (22.7%)	2279 (77.3%)	851 (98.3%)	15 (1.7%)
Total	923	7241	986	23

Table 5.6: the factor auxiliary compared in two- and three-verb clusters.

It is striking in table 5.6 that three-verb clusters are clearly more often right-branching (1 before 2) than two-verb clusters. This important finding, as well as some methodological remarks concerning the two-way division that is made here, will be discussed further in this chapter.

Another remarkable fact is that the difference between *hebben* and *zullen* is much smaller in three-verb clusters than in two-verb clusters. This may be an effect of the morphosyntax (infinitive or participle) of the verbal complements of *hebben*. In two-verb clusters the complement of *hebben* is a participle. As we have seen in the previous chapters, clusters with a participle prefer 2-1 order more strongly than infinitive clusters. The majority of the three-verb clusters with *hebben*, on the other hand, are IPP-constructions which contain infinitives rather than participles. This suggests that the morphosyntax of the second and third verb in the cluster may be of higher influence than the factor auxiliary proper. A detailed investigation of the variable syntagm in the next section will reveal that this is indeed the case.

5.3.2 Variable syntagm

The following table provides a survey of verb orders in three-verb clusters according to syntagm.

	Aux1	Aux2	Order					
			1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1
Z1	<i>zullen</i>	perfective	23	15	0	0	159	0
Z2		passive	29	12	0	0	202	7
Z3		modal	269	3	0	1	64	0
Z4		causative	42	2	0	6	10	0
Z5		evidential	10	0	0	0	0	0
Z6		aspectual	5	0	1	0	0	0
Z7		benefactive	3	0	0	0	0	0
		<i>Total</i>	<i>381</i>	<i>32</i>	<i>1</i>	<i>7</i>	<i>437</i>	<i>7</i>
H1	<i>hebben</i>	perfective	0	0	0	0	8	2
H2		passive	0	0	0	0	4	1
H3		modal	28	1	0	0	1	0
H4		causative	66	10	1	3	3	1
H5		perception	10	0	0	0	0	0
H6		benefactive	4	0	0	0	0	0
		<i>Total</i>	<i>108</i>	<i>11</i>	<i>1</i>	<i>3</i>	<i>16</i>	<i>4</i>

Table 5.7: verb order in three-verb clusters, divided by syntagm.

Considering the low number of tokens in some cells, I have only performed a Chi-Square test for the six most frequent syntagms (Z1, Z2, Z3, Z4, H3 and H4) and the three most frequent verb orders (1-2-3, 1-3-2 and 3-1-2). Even then, there is the methodological problem that three cells have expected counts lower than five. That said, the statistics included in Table 5.8 still suggest that the factor syntagm is significant for this subset of the data.

		Order			Total
		1-2-3	1-3-2	3-1-2	
syntagm	Z1	23 (11.7%)	15 (7.6%)	159 (80.7%)	197
	Z2	29 (11.9%)	12 (4.9%)	203 (83.2%)	244
	Z3	271 (80.2%)	3 (0.9%)	64 (18.9%)	338
	Z4	42 (77.8%)	2 (3.7%)	10 (18.5%)	54
	H3	28 (93.3%)	1 (3.3%)	1 (3.3%)	30
	H4	66 (83.5%)	10 (12.7%)	3 (3.8%)	79
Total		459	43	440	942

Table 5.8: cross-tab syntagm*order in three-verb clusters; Pearson $\chi^2 = 485.504$ (df=10); $p < .001$

The difference between the syntagms Z1 (MOD-PERF-INF) and Z2 (MOD-PAS-INF), however, is not significant (Pearson $\chi^2 = 6.966$; df=3; $p = .05$). Both of these have an infinitive as the second and a participle as the third verb. Likewise, Z3 (MOD-MOD-INF) and Z4 (MOD-CAUS-INF) do not seem to differ fundamentally as far as verb order is concerned, although this cannot be calculated unless only the two most frequent verb orders are included (Pearson $\chi^2 = 0$; df=1; $p = 1$). These syntagms both consist of a finite verb and two infinitives. H3 (PERF-MOD-INF) and H4 (PERF-CAUS-INF), both of which are IPP-clusters with two infinitives, also pattern together: both have a clear preference for the 1-2-3 order. The Chi-Square test is again unreliable here because of the low number of tokens in some cells. These findings however point to a clear pattern: the order in three-verb clusters depends on the morphosyntactic structure of verbs in the cluster. If we group the syntagms according to the morphosyntax of the second and third verb (including the less frequent syntagms), we obtain the following results.

Morpho -syntax	syntagm	Order						total
		1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1	
2=inf,	Z3,Z4,Z	331	5	1	7	74	0	418
3=inf	5, Z6,Z7	(79%)	(1%)	(0%)	(2%)	(18%)	(0,%)	
2=IPP,	H3,H4,	108	11	0	3	4	1	127
3=inf	H5,H6	(85%)	(9%)	(0%)	(2%)	(3%)	(1%)	
2=inf,	Z1,Z2	52	27	0	0	362	7	448
3=ptcp		(12%)	(6%)	(0%)	(0%)	(81%)	(2%)	
2=ptcp,	H4	0	0	1	0	0	0	1
3=inf		(0%)	(0,0%)	(100%)	(0,0%)	(0%)	(0%)	
2=ptcp,	H1,H2	0	0	0	0	12	3	15
3=ptcp		(0%)	(0%)	(0%)	(0%)	(80%)	(20%)	
Total		489	43	2	10	451	11	1006

Table 5.9: cross-tab status of second and third verb*order in three-verb clusters

Clusters with two infinitives, whether regular infinitives or IPP's, strongly prefer the 1-2-3 order. These two types differ from each other in one respect: 3-1-2 order is a rather frequent option in 'normal' double infinitive clusters (17%), but in IPP-clusters it is much less frequent (3.1%). Clusters with an infinitive and a main verb participle, on the other hand, strongly favour the 3-1-2 order. In other words, the participle preferably occupies the first position in the cluster. The tendency to prepose the main verb participle (3=PTCP) applies even more rigidly in the syntagms with two participles (H1 and H2). These double participle syntagms moreover are the only ones with a fair share of 3-2-1 order (20%).

There is only one instance of a cluster in which IPP is expected, but does not occur, in other words, where the complement of perfective hebben is a participle with a bare infinitive as its own complement. This example was already discussed above in (5), repeated below as (23).

- (23) *gelyck sy dat voirtytz tVullenhaue gedaen² hebben¹ verfolghen³*
 like they that formerly to-Vullenhave done have continue
 ‘as they have formerly made that continue at Vullenhave’

The order of this single example is also remarkable. It is the only instance of the syntagm H4 with 2-1-3 order. As I have argued earlier in this chapter, this clause plausibly has a syntactic structure that is different from that of regular IPP-clusters: it should probably be analysed as a two-verb cluster with a higher-level (clausal) complement. This allows us to maintain the generalisation in Barbiers (2005b) that 2-1-3 order does not exist in (proper) three-verb clusters. For reasons of consistency, however, the example above is tagged as if it were a regular three-verb cluster.

Another remarkable result in Table 5.17 is the distribution of the 2-3-1 order. Recall that this order in Present-day Dutch dialects is restricted to IPP-clusters and occurs primarily in the south of the Dutch-speaking area. Our data set on the other hand contains no more than three instances of this order in IPP-clusters with *hebben*. This low number suggests that perhaps the general southern preference for this order in IPP-clusters is of later date, although we do not have any data from further south than Breda. However, there are also seven tokens with 2-3-1 order in double infinitive clusters with *zullen*. An example is given below.

- (24) *dat nyemant van onsen borgeren noch ondersaten voertan mosschelen*
 that nobody of our citizens nor subjects henceforth mussels
binnen onser stadt off stat-vryheyt vercoepen off doen² vercoepen³ en sel¹
 within our city or city-immunity sell or do sell NEG shall
 ‘that none of our citizens or subjects will henceforth be allowed to sell or
 make sell any mussels’ (Utrechts, 1520)

It should be noted, however, that each of these seven tokens has a structure similar to the one in the example above, where a three-verb cluster with *zullen*

is coordinated with a two-verb cluster from which *zullen* is ellipted. As we saw before, two-verb clusters with *zullen* (especially in Utrechts) prefer 2-1 order, whereas three-verb clusters with *zullen* and two infinitives mostly have 1-2-3 order. The rare pattern 2-3-1 in these tokens may therefore follow from two systems being mixed in one clause. The causative auxiliary *doen* is placed before its main verb complement *verkoepen*, which is the standard order in clusters of this type (2-3). Their relative position with regard to the finite auxiliary, however, seems to be copied from the coordinated two-verb cluster (2-1), which causes 2 and 3 to occur before instead of after 1 (2-3-1). This is reminiscent of a similarly odd verb order pattern (2-1-3) in a coordinated structure that was discussed in example (6) earlier in this chapter. These examples illustrate that coordination with another cluster type may result in rare verb order patterns that perhaps would not occur in other contexts.

On the whole, our results for the factor syntagm are rather comparable to the early new High German results in Sapp (2006). As in the present study, syntagm type is a significant factor in Sapp's data, at least when minor syntagms with a low number of occurrences are excluded from the tests. Sapp (2006: 50) observes that Early New High German three-verb clusters containing a participle disfavour 1-2-3 order. He relates this tendency to the low rate of 1-2 order in two-verb clusters with a participle. On the other hand, he shows that three-verb clusters with two infinitives strongly disfavour 3-2-1 order. In our Late Middle Dutch data set it is not only clusters with two infinitives, but practically all three-verb clusters that disfavour the 3-2-1 order, with the exception of those syntagms containing two participles.

5.3.3 Variable dialect

	Order with <i>zullen</i>						Total
	1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1	
Brabants	300 (59,3%)	8 (1,6%)	1 (0,2%)	2 (0,4%)	194 (38,3%)	1 (0,2%)	506
Drents	19 (14,7%)	21 (16,3%)	0 (0,0%)	0 (0,0%)	88 (68,2%)	1 (0,8%)	129
Utrechts	64 (27,7%)	3 (1,3%)	0 (0,0%)	5 (2,2%)	154 (66,7%)	5 (2,2%)	231
Total	383	32	1	7	436	7	866

Table 5.9: cross-tab dialect*verb order in three-verb clusters with *zullen*

As the table above shows, Brabants has by far the highest proportion of 1-2-3 order in three-verb clusters with *zullen*. Recall from the previous chapter that this dialect also has the strongest preference for 1-2 order in two-verb clusters, both with *zullen* and *hebben*. It is remarkable that Utrechts has more 1-2-3 order than Drents, since the data for two-verb clusters show that 1-2 order with *zullen* is much more common in Drents than in Utrechts. A Chi-square test including only the three most frequent orders, shows that the factor dialect is significant (Pearson $\chi^2 = 164.774$ (df=4); $p < .001$). There are indications, however, that this factor interacts with the factor syntagm. To begin with, more than half of the Brabants tokens are double infinitive clusters, which, as pointed out in the previous section, favour 1-2-3 order. Almost 80% of the Drenthe data, on the other hand, consists of clusters in which the most deeply embedded verb is a participle (MOD-PERF-PTCP and MOD-PAS-PTCP) which probably explains the higher share of 1-3-2 and 3-1-2 in the Drents dialect. We will come back to these facts in chapter 6, where I will argue that the innovative “double modal construction” occurs earlier in Brabants than in the other dialects, accounting for a higher share of double infinitive clusters and thus more 1-2-3.

That said, it seems that the preference for 1-2-3 in Brabants occurs regardless of the syntagm. In clusters with *zullen*, a perfective or passive

auxiliary and a participle (MOD-PERF-PTCP and MOD-PAS-PTCP), the share of 1-2-3 order in Brabants is still 21.7%, which is in sharp contrast with the almost negligible share of 1-2-3 order that the other dialects display in these syntagms (1.0% in Utrechts, 1.7% in Drents). Double infinitive clusters, on the other hand, clearly favour 1-2-3 order not only in Brabants, but also in the other dialects: 89,6% in Brabants, 64,3% in Drents, and 56,4% in Utrechts. It is especially noteworthy that even the Utrechts dialect, lacking almost any trace of 1-2 order in two-verb clusters with *zullen*, still has 1-2-3 order in the majority of clusters with *zullen* and two infinitives.

The following table shows the results of the factor dialect for *hebben*-clusters.

	Order with <i>hebben</i>						Total
	1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1	
Brabants	56 (83.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (14.9%)	1 (1.5%)	67
Drents	49 (72.1%)	11 (16.2%)	1 (1.5%)	1 (1.5%)	5 (7.4%)	1 (1.5%)	68
Utrechts	3 (37.5%)	0 (0.0%)	0 (0.0%)	2 (25.0%)	1 (12.5%)	2 (25.0%)	8
Total	108	11	1	3	16	4	143

Table 5.10: cross-tab dialect*verb order in three-verb clusters with *hebben*

The number of tokens is too low here to perform a reliable statistic test. Nevertheless, the trends are quite clear. Again, it is Brabants that has the clearest preference for 1-2-3 order. Note that Drents is the only dialect with some instances of the 1-3-2 order in clusters with *hebben*. An example was given in (3), repeated below as (25).

- (25) *dat om Ludekens wijff ende sonne dat gelt hadn haelen³heten²*
 that him Ludeken's wife and son the money had fetch make.IPP
 'that Ludeken's wife and son had made him fetch the money'

(Drents, 1460)

While this order in most Present-day Dutch dialects is restricted to clusters in which the main verb is a participle (Barbiers et al. 2008) and rarely occurs in IPP-clusters, it is in fact the most common order in IPP-clusters in Present-day German.¹⁶ This was also the case in many Early New High German dialects (e.g. Härd 1981, Sapp 2006). Recall that the province of Drenthe is situated in the east of the Dutch-speaking area and that there was no clear dividing line between “Dutch” and “German” dialects at the time. It is therefore not surprising that the dialect of Drenthe shares some characteristics with neighbouring ‘German’ dialects.

Something else that is remarkable is the low number of three-verb clusters with *hebben* in the dialect of Utrecht. Of the 8 tokens that I have found, 2 are double participle clusters belonging to syntagm H1 (PERF-PERF-PTCP). Both of these have 3-2-1 order. The other 6 are IPP-clusters (H3: PERF-MOD-INF and H4: PERF-CAUS-INF). The innovative IPP-effect clearly emerges later in this dialect than in the other two dialects. I will elaborate on this in chapter 7. Also, verb order in three-verb clusters with *hebben* seems to vary somewhat more in Utrechts than in the other two dialects. This larger degree of variation might be related to the fact that the IPP- syntagms are relatively new in this dialect, although more data would be desirable to enforce this claim.

5.3.4 *Variable time*

The next question to answer is whether or not verb order in three-verb clusters changes over time. The results for *zullen* are presented in table 5.11.

¹⁶ The 3-2-1 order has also been called *Voranstellung* in the literature on German (e.g. Härd 1981).

century	Order with <i>zullen</i>						Total
	1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1	
14th	8 (42.1%)	1 (5.3%)	0 (0.0%)	0 (0.0%)	9 (47.4%)	1 (5.3%)	19
15th	255 (46.6%)	18 (3.3%)	1 (0.2%)	3 (0.5%)	265 (48.4%)	5 (0.9%)	547
16th	120 (40.0%)	13 (4.3%)	0 (0.0%)	4 (1.3%)	162 (54.0%)	1 (0.3%)	300
Total	383	32	1	7	436	7	866

Table 5.11: cross-tab century*verb order in three-verb clusters with *zullen*

Verb order in three-verb clusters with *zullen* seems to be rather stable across the centuries. The Chi-Square test, performed only for the three most frequent orders (1-2-3, 1-3-2 and 3-1-2) indicates that time is *not* a significant factor for this subset of the data (Pearson $\chi^2 = 3.837$ (df=4); $p=0.42$). What is quite salient, however, is the low number of tokens in the first time slice, the 14th century. Admittedly the amount of text studied varies somewhat between centuries. Since the size of our 14th C. subcorpus is smaller, the number of tokens from the 14th C. is expected to be lower across the board. The frequency difference in the table presented here, however, is much larger than elsewhere. As a rough measure, let us compare these data to the results for two-verb clusters. Table 4.4 in the previous chapter for example shows that two-verb clusters with *zullen* are found 3.75 times more often in the 16th C. than in the 14th C. material. This difference may indeed be attributed to a difference in the size of the textual material in both centuries. In the table above, however, the difference in frequency between the 14th and the 16th C. is more than factor 15. This suggests that three-verb clusters with *zullen* have indeed become more frequent over the centuries.

century	Order with <i>hebben</i>						Total
	1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1	
14th	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1
15th	77 (73.3%)	11 (10.5%)	0 (0.0%)	1 (1.0%)	12 (11.4%)	4 (3.8%)	105
16th	30 (81.1%)	0 (0.0%)	1 (2.7%)	2 (5.4%)	4 (10.8%)	0 (0.0%)	37
Total	108	11	1	3	16	4	143

Table 5.12: cross-tab century*verb order in three-verb clusters with *hebben*

Table 5.12 shows the results of the factor time for three-verb clusters with *hebben*. None of the verb orders is attested sufficiently frequently to perform a reliable statistic test. As with *zullen*-clusters, the verb order distribution is quite stable across time. The preference for 1-2-3 order in clusters headed by *hebben* seems a bit stronger in the 16th C. than in the 15th C., which can be mainly attributed to the fact that the competing order 1-3-2 is only attested in our 15th C. material. Recall from the previous section that 1-3-2 is the typical order for IPP-clusters in Present-day German. The 11 tokens with this order all occur in IPP-syntagms in 15th C. Drents. This verb order pattern seems to have become obsolete in Drents by the end of the 15th C.

The difference in frequency between the centuries is even more remarkable in Table 5.12 than in the previous table. Only two tokens of a three-verb cluster with *hebben* were found in the 14th C. corpus. As can be seen in the following example, the first is an IPP-construction with causative *doen* ‘do’.

- (26) *ende die voerseide wilderde ende goed also alsi gheleghen*
 and the aforementioned wilderness and estate so as-she situated
es ende wi se hebben¹ doen² meten³ onsen gesuoren lantmeter
 is and we her have do.IPP measure our sworn land surveyor
 ‘And the aforementioned wilderness and estate as it is situated and
 (as) we have made our sworn land surveyor measure it...’

(Brabants 1314)

The second example, dated 1380, also comes from Brabants and involves *hebben* combined with causative *laten* 'let'. This example is not included in Table 5.12, since it concerns a case where the cluster is interrupted by non-verbal material. These examples will be discussed further in chapter 7 on the rise of the IPP-effect.

To explain this frequency difference, I propose the same argument as in the previous section: IPP-syntagms, being a Middle Dutch innovation, gain frequency over the centuries and thus are attested more often in the later texts. Under the assumption that the IPP-effect was a relatively young phenomenon in 15th C. Drents, the initial order variation between 1-2-3 and 1-3-2 can also be explained: the innovation starts with a low frequency and with some internal variation, after which the order is fixed. The IPP-construction in 16th C. Drents already has 96.3% 1-2-3 order. This confirms the hypothesis that was put forward for Utrechts in the previous section. The Utrechts data contains only no more than six tokens of IPP-constructions, and verb order varies greatly in these tokens. In other words: the younger the construction is in a dialect, the more internal variation we find.

5.3.5 Summary

This study of three-verb clusters in Late Middle Dutch dialects has shown that the two auxiliaries *hebben* and *zullen* have different order preferences, just like in two-verb clusters. A more fine-grained comparison, also taking into account the second auxiliary in the hierarchy, revealed that syntagm as a whole is a significant factor too, insofar as the numbers allow for a reliable statistic testing. The results for the factor syntagm suggested that the morphosyntax of the second and third verb in the hierarchy was the most decisive factor.

Clusters with two infinitives (whether 'normal' infinitives or IPP) clearly favour the 1-2-3 order. This tendency can be related to the results for two-verb clusters, where we saw that *zullen*, which selects an infinitive, more readily precedes the main verb than *hebben*, which selects a participle. Yet, the

preference for 1-2-3 in clusters with two infinitives is much stronger than the preference for 1-2 order in *zullen*-clusters with only one infinitive.

Three-verb clusters that include a participle have different order preferences. If the third verb is a participle, the preferred order is 3-1-2, with the participle preceding the other two verbs. This is also reminiscent of our results for two-verb clusters where the participle mostly precedes *hebben*, but at the same time it is curious that the first auxiliary (in this case mostly *zullen*) is – again – so strongly inclined to precede the second auxiliary (1-2). An account of verb order in three-verb clusters should be able to explain the difference between clusters that contain one or more participles and clusters that, apart from the finite verb, contain only infinitives, but it should also provide an explanation for the apparent undesirability of strict 3-2-1 order in virtually *all* the syntagms.

The factor dialect also turned out to be significant whenever it could be tested. Both in three-verb clusters with *zullen* and *hebben*, Brabants favours the 1-2-3 order more than the other dialects, which again is reminiscent of the results for two-verb clusters, where Brabants had more 1-2 order than the other dialects. Finally, rather unlike the results for two-verb clusters, the factor time does not play a crucial role in three-verb clusters. Perhaps with the exception of some initial variation in the earliest IPP-clusters (an observation based on a rather low number of tokens), the factors that determine the choice between the six logically possible orders seem to be diachronically stable within the period that was investigated.

5.4 Four-verb clusters in the data set

There are 29 four-verb clusters in the data set. These can be grouped into six different syntagms, each of which will be illustrated with an example.

Interestingly, all the four-verb syntagms have *zullen* as the highest auxiliary. They are again indexed with a capital Z and a number index (8 or higher).

I have found eleven four-verb clusters that may be categorised as the syntagm Z8, which as can be seen below is a series of infinitives.

'If any butcher, who has no son or sons, had butchered meat and had to leave his house or became ill at one, (that) he shall be allowed to make another butcher sell this butchered meat on his slaughtering block/counter' (Brabants 1560-1569)

Another syntagm with a series of three infinitives is Z9, which is attested only once. It is similar to the previous syntagm, but with *leren* ‘teach’ as the third verb in the hierarchy. Note, by the way, that the verb *leren* is not found in three-verb clusters. It is categorized here as a benefactive auxiliary.

- (28) Z9: *zullen* – modal auxiliary – benefactive auxiliary – V
 INF INF INF

Corpus example:

dat die meysters van der zadelaers gilde hoer leerkijndere wel sellen¹
 that the masters of the saddlers guild their apprentices PART shall
moegen²leeren³ beeldemaken⁴
 may teach sculpture
 'that the masters of the saddlers guild shall be allowed to teach their
 apprentices to sculpture' (Utrechts, 1510)

The following syntagm, Z10, has two infinitives and a participle. There are eleven attestations in the data set.

- (29) Z10: *zullen* – modal auxiliary – passive auxiliary – V
 INF INF PTCP

Corpus example:

want die straten oick gehooght⁴ sullen¹ moeten² worden³
 because the streets also heighthen.PTCP shall must.INF become.INF
 'because the streets will also have to be elevated'(Brabants, 1530)

Syntagm Z11 again consists of a series of verbs that are (at least superficially) infinitives. There are two instances of this syntagm, in which *zullen* is complemented by a perfective auxiliary, which in turn selects a causative auxiliary that undergoes the IPP-effect.

- (30) Z11: *zullen* – perfective auxiliary – causative auxiliary – V
 INF INF (IPP) INF

Corpus example:

alz dat sy Hermen Pryss solden¹ hebben² laeten³ daeghen⁴ myt
 as that they Hermen Pryss should have let.IPP summon with
uuthemschen brieven
 foreign letters

‘... because they have made Herman Pryss summon with foreign letters...’

(Drents,1500)

The following syntagm, also attested twice, has a similar structure as Z11. This time, however, the IPP-verb is a modal auxiliary instead of a causative.

- (31) Z12: *zullen* – perfective auxiliary – modal auxiliary – V
 INF INF (IPP) INF

Corpus example:

Soo souden sijnne erfgenaemen na sijn doot deselve goede als
 thus should his heirs after his death the-same goods as
erfgenamen mogen doen ontsetten, gelijk dat die doode soude¹
 heirs may.INF do.INF confiscate like that the dead should
hebben² mogen³ doen⁴
 have.INF may.IPP do

‘Thus his heirs would be allowed to have the same amount of goods confiscated, as the deceased would have been allowed to do’ (Brabants, 1470-1479)

Z13, finally, contains the ‘perfect of passive’ discussed in section 3.5.3, but this time the whole construction is embedded under finite *zullen*, which yields a four-verb cluster with two participles. This syntagm is also attested twice.

- (32) Z13: *zullen* – perfective auxiliary – passive auxiliary – V
 INF PTCP PTCP

Corpus example:

Ons heeft gethoent Jacob Florys Kocxzone, ingeseten onser stad van
 Us has shown Jacob Florys Kocxzone resident our.GEN city of
Breda, hoe dat ghij hem met sinen live, schepen en haven gecommert
 Breda how that you him with his life ships and harbour harassed
hebt om deswille, dat uwe poirteren hier in onser stadt tonrecht
 have for the-reason that your citizens here in our city unjustly
vertolt⁴ souden¹ hebben² geweest³.

taxed.PTCP should have.INF been.PTCP

'Jacob Florys Kocxzone, a resident of our city of Breda, has shown to us
 how you have harrassed him with his life, ships and harbour because
 your citizens would have been taxed wrongfully here in our city.'

(Brabants, 1430)

In spite of the immense array of different four-verb combinations that could theoretically be made out of all the auxiliary types discussed in the previous sections, the number of different syntagms that actually occur is surprisingly low, which suggests that there are combinatorial restrictions on auxiliaries. Not only the mutual combination of auxiliaries seems to be bound to certain restrictions, but also the internal order of the verb cluster. Of the 24 logically possible ways to order four verbs, only five are actually attested. An overview of verb order in the different syntagms is given in table 5.22.

Syntagm	Order					Total
	1-2-3-4	1-2-4-3	1-3-4-2	3-4-1-2	4-1-2-3	
Z8	10	0	0	1	0	11
Z9	1	0	0	0	0	1
Z10	2	2	0	0	7	11
Z11	1	0	1	0	0	2
Z12	2	0	0	0	0	2
Z13	0	0	0	0	2	2
total	16	2	1	1	9	29

Table 5.22: syntagm*verb order in four-verb clusters with *zullen*

The size of this subset of data does not allow for any statistical testing of the factors syntagm, dialect or time. I will only put forward a couple of suggestions here that may be tested in further research. First of all, clusters with only infinitives (Z8, Z9 and the IPP-syntagms Z11 and Z12) seem to prefer the strictly ascending order (1-2-3-4). Our data set contains only two exceptions to this generalisation. The first exception, 1-3-4-2, occurs in syntagm Z11. The order in this token is identical to the 2-3-1 order that is common in IPP-constructions today (but was rather unfrequent in Late Middle Dutch), only this time the IPP-construction as a whole is embedded under *zullen*. Note that *zullen* as the highest auxiliary precedes the rest of the cluster, which results in the order 1-3-4-2.

- (33) *alsoe dat hie in der vryheden metten vyainde gehaindelt hadde, ind oick*
as that he in the immunity with-the enemy traded had and also
Johan Venijnck vain den selfften solde¹ laten³ fangen⁴ hebben²; ...'
Johan Venijnck of the same should let.IPP catch.INF have.INF
'...that he has traded with the enemy within the protected area, and that
he would have let the same (enemy) catch Johan Venijnck ...'
(Drents, 1520)

The other exception, 3-4-1-2, occurs in a series of 'pure' infinitives (syntagm Z8) and is reminiscent of the discussion on coordination earlier in this chapter.

Again, the deviating order seems to be a mix-up of two systems (right-branching and left branching), which may be an effect from this cluster being coordinated with a shorter cluster which, as a result of the coordination, has undergone ellipsis. This partially ellipted cluster putatively is an instance of syntagm Z3 (*zullen* – modal auxiliary – main verb) with 3-1-2 order, which was not an uncommon order for this syntagm (see section 5.3.2). A reconstruction of the ellipted verbs is given between brackets.

- (34) *dat die van der Goude, van Haerlem, van Delf ende van Amersfoort alhyr*
 that those of the Gouda of Haarlem of Delft and of Amersfoort here
binnen onser stadt ende stat-vryheyde hoer byer binnen hoeren steden
 within our city and city-freedom their beer within their cities
gebrouwen, tsy koyt ofte hoppe, brengen³, vercopen³, tappen³ (zellen¹
 brewed it-be oat or hop bring sell pour shall
moigen²) ofte doen³ tappen⁴ zellen¹ moigen²
 may or do pour shall may
 ‘that those of Gouda, Haarlem, Delft and Amersfoort will be allowed to
 bring, sell and pour their beer, or to have others pour their beer, brewed
 in their own cities, into our city and the protected area, whether it be oat
 or hop.’(Utrechts, 1480)

The syntagm Z10, finally, is the only syntagm with a participle as the lowest verb in the hierarchy. This syntagm may have strict ascending order like the other four-verb syntagms, but more often the participle is preposed, yielding the order 4-1-2-3. The rule for this syntagm seems to be that the verbs are ordered according to the following pattern, where x stands for a possible position of the participle. The position between 1 and 2 is between brackets, since it is not attested in our data but it is documented in Present-Day Dutch and Dutch dialects.

- (35) Possible positions of the participle in four-verb clusters, syntagm Z10:
 x-1-(x)-2-x-3-x

With these data at our disposal, we will now turn to a discussion of the influence of cluster length on verb order.

5.5 The impact of cluster length on verb order

Some remarkable differences between two-verb clusters and longer clusters have come to light in the previous sections. The core facts are summarised in the following three generalisations, made on the basis of the data presented in this chapter:

1. Main verb participles are more likely to precede an auxiliary than main verb infinitives (in short as well as long clusters)
2. In clusters of three and more verbs, the first auxiliary in the hierarchy shows a strong tendency to precede the second auxiliary in the hierarchy (1 before 2)
3. Longer verb clusters containing only infinitives (whether these are regular infinitives or IPP-verbs) tend towards strictly ascending order (1-2-3-etc.)

The first generalisation captures the difference in order preference of *hebben* and *zullen* in two-verb clusters, but also the patterns 1-3-2, 3-1-2 and 4-1-2-3 that were found in three- and four-verb clusters with a participle as the most deeply embedded verb. The second and third generalisations summarise the effect of cluster length on verb order.

We saw in the previous sections that verb order in three-verb clusters, unlike in two-verb clusters, was diachronically stable, although there is little documentation of three-verb clusters in the 14th C. The generalisations above furthermore apply in all the dialects, even if the share of 1-2-3 orders is higher in Brabants than in the other two dialects. In what follows I will argue that

these generalisations follow from the structure of longer verb clusters itself, and that they do not only apply in our corpus (5.5.1) but also to a certain extent in many (if not all) other West-Germanic clustering languages and dialects. I will discuss my findings against the backdrop of what is known about verb order in Present-day German, Early New High German and Present-day Dutch in 5.5.2.

5.5.1 Evidence from the corpus

Our concern here is to compare the order in two-verb clusters, which is a two-way variable, to the order in longer verb clusters. In section 5.3.1 I divided the data for three-verb clusters in two groups: a first group where *hebben* or *zullen* precedes its immediate complement verb (i.e. 1 before 2) and a second group where the top verb follows its immediate complement (2 before 1). The orders 1-2-3, 1-3-2, and 3-1-2 belong to the first group, whereas 2-1-3, 2-3-1 and 3-2-1 belong to the second group. The results are repeated below, complemented with the results for four-verb clusters, divided in the same way.

	Order in 2-verb clusters		Order in 3-verb clusters		Order in 4-verb clusters	
	1-2	2-1	1-2	2-1	1-2	2-1
<i>hebben</i>	253 (4.9%)	4962 (95.1%)	135 (94.4%)	8 (5.6%)	0 (0.0%)	0 (0.0%)
<i>zullen</i>	670 (22.7%)	2279 (77.3%)	851 (98.3%)	15 (1.7%)	29 (100.0%)	0 (0.0%)
Total	923	7241	986	23	29	0

Table 5.23: verb order in two-, three- and four-verb clusters compared

The table above shows that, while the 2-1 order is preferred in two-verb clusters, the opposite order 1-2 is dominant in three-verb clusters, and possibly even mandatory in four-verb clusters.

Perhaps the two-way division that is made here raises some methodological questions. After all, it is difficult to categorise intermediate verb

order patterns like 1-3-2 or 3-1-2 as corresponding to either 1-2 or 2-1, since they are actually combinations of the two patterns. Even if we adopt the more rigid view that only 1-2-3 reflects the same underlying pattern as 1-2, however, the effect remains present. It has been shown abundantly that 1-2-3 is much more frequent than its mirror image, whereas in two-verb clusters 2-1 is (still) by far the dominant order.

5.5.2 Evidence from other West-Germanic languages

Looking at other empirical studies of verb order in West Germanic languages and dialects, it is not difficult to find other evidence supporting the claim that cluster length affects verb order in a quite fundamental way. Even German, which is famous for its left-branching verb clusters (2-1 and 3-2-1), has different order preferences as verb clusters become longer, as shown for example by Askedal (1989, 1991) and many others.

Present-day German has rigid 2-1 order in two-verb clusters. The corresponding order in three-verb clusters is 3-2-1, with the selecting verbs to the right of their respective complements. Some types of German three-verb clusters, however, have the finite verb in the first rather than in the last position, so that the order is 1-3-2. This phenomenon has been called *Oberfeldumstellung* or *auxiliary flip* (e.g. Bech 1955, Askedal 1991, Seuren 2003). This order is obligatory in clusters that are headed by a perfective auxiliary. This is illustrated in the following example, where the auxiliary *haben* 'have' is complemented by the infinitive (IPP) of perception verb *hören* 'hear' which in turn selects the main verb *rufen* 'call'.

- (36) *daß er sie hat¹ rufen³ hören²*
 that he her has call hear.IPP
 'that he has heard her call' (Schmid 2005: 48)

The 1-3-2 order is also grammatical in clusters with the future auxiliary *werden* and two infinitives. An example is given in (37). *Werden* is complemented by the modal verb *können* ‘can’ and the main verb *fragen* ‘ask’.

- (37) *daß er sie nicht wird¹ fragen³ können²*
 that he her not will ask can.INF
 ‘that he will not be able to ask her’ (Haider 2003:104)

Verb order in Present-day German dialects is definitely subject to more variation than the standard language. Kaufmann (2007) presents facts from Mennonite German, where only 5.2% of the two-verb clusters has 1-2 order whereas 92.9% of the three-verb clusters have partial or full right-branching order. Schmid (2005:35-82) explores the different orders of three-verb clusters in Bernese German, Sankt Gallen German, Zürich German and Standard German. She only discusses clusters where either the perfective auxiliary *haben* or the future auxiliary *werden* is the top verb, and where the second verb takes an infinitive as its complement¹⁷. Whereas Standard German allows only the 1-3-2 and the 3-2-1 order in such clusters, the other varieties in addition all make use of the alternative orders 1-2-3 and/or 3-1-2. In many Swiss German dialects, like in Present-day Dutch, 1-2-3 is the predominant pattern. This is illustrated in (38), where the future auxiliary *werden* ‘will’ is complemented by the infinitive *wöue* ‘want’ and the main verb *make* ‘do’.

- (38) *das i das immer werde¹ wöue² mache³*
 that I that always will want do
 ‘that I will always want to do that’ (Bernese German; Schmid 2005: 44)

¹⁷ Clusters where a future auxiliary is further complemented by a passive/perfective and a participle, are outside the scope of Schmid’s research. The order preferences for these clusters are probably different, as they are in Dutch.

Schmid's data show that three-verb clusters in German dialects tend towards 1-2-3 order more robustly than in Standard German and thus share the preference for right-branching order that was found in our data. This is confirmed by the results of other dialectological studies. For an overview of empirical studies of verb clusters in German dialects, I refer to Wurmbrand (2005) and Dubenion-Smith (2008:29-59).

Sapp (2006) carried out a diachronic study of verb order in Early New High German (1350-1650), and has also found a greater range of variation than in Present-day Standard German. He finds 24% 1-2 order in two-verb clusters (2006:28). His data show four different options for three-verb clusters. One of these is the strictly right-branching order 3-2-1, representing 17% of the data. The other three orders are 1-3-2 (41%), 1-2-3 (17%) and 3-1-2 (23%) (2005:46). In other words, 81% of his data for three-verb clusters involve orders where the finite auxiliary occurs to the left of its immediate complement verb 1-2. As mentioned before, his results are quite similar to our Early Modern Dutch data, with the proviso that the 3-2-1 order is attested more often in Sapp's data from Early New High German. A more detailed comparison of the three-verb syntagms in Sapp's study reveals that these 3-2-1 orders primarily occur in syntagms with a participle main verb, and, crucially, *not* in IPP-clusters. Interestingly, Sapp concludes that the *Oberfeldumstellung* 1-3-2 is the default order for three-verb clusters in Early New High German, regardless of the syntagm.

The Dutch standard language, with its preference for 1-2 even in two-verb clusters, might not be the best testing ground for the hypothesis that the effect of cluster length is cross-linguistically robust. However, the effect of cluster length can be still be witnessed in Present-day Dutch *hebben*-clusters. When *hebben* has only a main verb complement, the 1-2 order and the 2-1 order are equally acceptable. If a second auxiliary is added, there is an absolute preference for 1-2-3. Some Present-day Dutch dialects moreover do have a strong preference for 2-1 in two-verb clusters but employ 1-2-3 or mixed orders in three-verb clusters. This 'mixed' system is typical of dialects from the

western and central provinces of the Dutch-speaking area (e.g. Barbiers et al 2008: 22).

Concluding this brief overview, we may state that three-verb clusters are not only different from two-verb clusters in Early Modern Dutch, but also in other West-Germanic languages, both in historical and in contemporary variants. All the phenomena described in this section, I will argue, result from the same underlying principles that cause the effect of cluster length in our Early Modern Dutch corpus.

5.6 An integrated account of verb order

The previous sections have made it clear that the length of a verb cluster has an impact on the internal order of the cluster, not only in our Late Middle Dutch data but in other West-Germanic languages and dialects as well. Partially building on previous work by German scholars (e.g. Lötscher 1978, Dubenion-Smith 2008), I will here propose an account that captures these facts. Central to this account are two principles that relate the variation in the verbal sequence to an interplay of structural and performance factors.

5.6.1 Verb order as a cue for cluster hierarchy

We saw in chapter 2 that clusters have an internal hierarchy that may be, but is not necessarily reflected by the surface order of the verbs in the cluster. The linear order of verbs may render the syntactic hierarchy from left to right (1-2-3-...), from right to left (...-3-2-1), or not directly render the syntactic hierarchy. The question now is: how do language users know what the hierarchy of verbs in a cluster is? I propose that there are three different cues that the hearer can use to determine the internal hierarchy of a verb cluster: morphology, semantics, and verb order. My hypothesis is that verb order becomes more important as a cue as clusters become longer. I will discuss this with some examples.

The modal verb *moeten* ‘must’ in (39a) is in the complement of perfective *hebben* ‘have’. This syntactic hierarchy is reversed in (39b), where

perfective *hebben* is in the complement of modal *moeten*. We know this because the ‘highest’ auxiliary in the clause is mostly finite, whereas the rest of the verb cluster is non-finite. In the case of (39a), *hebben* is the finite verb and thus the highest verb. The same is true for *moeten* in (39b). In other words: the hearer can use the morphology of the finite verb as a cue.

(39a) ... *dat Simon zijn huis heeft¹ moeten² verkopen³*

that Simon his house has must.IPP sell.INF

‘... that Simon has had to sell his house’

(39b) ... *dat Simon zijn huis moet¹ hebben² verkocht³*

that Simon his house must have.INF sold.PTCP

‘... that Simon must have sold his house’

As discussed in chapter 2, the verb cluster hierarchy affects not only the morphosyntax, but also the semantics of the verb cluster. Semantically speaking, the higher auxiliary has scope over the verbs below it. Thus, *heeft* scopes over *moeten* in (39a), and *moet* scopes over *hebben* in (39b). Semantics is not useful as a cue here, since both scope hierarchies are semantically possible.

Another set of examples is given below. This time, both *kunnen* and *hebben* are infinitives in the complement of modal *zou*.

(40a) *Ik heb geen idee of ze hem zou¹ hebben² kunnen³ vermoorden⁴.*

I have no idea whether she him should have.INF can.IPP kill.INF

‘I have no idea whether she could have killed him’ (i.e. whether she was capable of it)

(40b) *Ik heb geen idee of ze hem zou¹ kunnen² hebben³ vermoord⁴.*

I have no idea whether she him should can.INF have.INF killed.PTCP

‘I have no idea whether she could have killed him’ (i.e. whether it is possible that she did)

In this case, language users cannot rely on the morphology of the finite verb in order to decide which one of the two auxiliary verbs (*hebben* 'have' and *kunnen* 'can') is the highest. However, the morphology of the main verb is still instructive: *vermoorden* 'kill' is an infinitive in (40a), suggesting that it the immediate complement of *kunnen* (which, as a modal verb, selects an infinitive complement). The hearer can derive from this knowledge that *hebben* must be above *kunnen* in the hierarchy. In (40b), *vermoord* occurs as a past participle, implying that it must be the complement of *hebben*, i.e. *kunnen* is above *hebben* in the hierarchy. Observe, by the way, that the semantic distinction between both variants is subtle. The English translation is the same for both examples and is in fact ambiguous between both readings.

In example (41) below, we are dealing with a series of three infinitives.

(41a) *dat hij het moet¹ kunnen² laten³ doen⁴*

that he it must can.INF let.INF do.INF

'that he must be able to have it done'

(41b) **dat hij het moet¹ kunnen³ laten² doen⁴*

that he it must can.INF let.INF do.INF

'that he must cause (someone) to be able to do it'

Here, the morphology does not provide any cue to the relative hierarchy of the verbs *laten* and *kunnen*. There is however, a semantic cue: an interpretation where *kunnen* is in the scope of *laten* as in (41b) would be semantically odd. As suggested earlier, it appears that there are semantic restrictions on the combinations of modal verbs and other verbs demanding an infinitive as their complement, so that the modal verb is mostly the highest in a hierarchy of infinitives. Yet, it seems that verb order is becoming a more important cue in contexts like this one.

In the examples below, finally, verb order is really the only cue for the hearer. These are similar to example (40) above, but with a causative verb added directly above the main verb. The result is (at least superficially) a series

of infinitives. Now neither overt morphology or semantics can be used as a cue in determining the relative hierarchy of the two auxiliaries *hebben* and *kunnen*.

(42a) *Ik heb geen idee of ze hem zou¹ hebben² kunnen³ laten⁴ vermoorden⁵*

I have no idea whether she him should have.INF can.IPP let.INF kill.INF

'I have no idea whether she could have had him killed' (i.e. whether she was capable of it)

(42b) *Ik heb geen idee of ze hem zou¹ kunnen² hebben³ laten⁴ vermoorden⁵.*

I have no idea whether she him should can.INF have.INF let.IPP kill.INF

'I have no idea whether she could have had him killed' (i.e. whether it is possible that she did)

In this case, the hearer or reader needs to rely on verb order to find out what the hierarchy of the cluster is. This confirms our hypothesis that verb order becomes more important as a cue for the hearer as the number of verbs in the cluster increases.

To make this assumption more explicit, I propose that there is a preference on the part of the speaker for the surface order to reflect the underlying hierarchy of the verbs. This principle, which I call 'Reflect Underlying Hierarchy', assumes that the semantic-syntactic structure of the verb cluster is best understood by the hearer if it is mirrored in the surface order. Depending on one's assumptions about the (underlying) complementation direction of a language, the underlying hierarchy may be represented by a left-branching or a right-branching structure. If it is supposed, as we did in chapter 2, that both complementation directions are equally grammatical options from which languages can choose, the principle 'reflect underlying hierarchy' can be phrased as in (43) below.

- (43) **Reflect Underlying Hierarchy (RUH):** the linear order of verbs in a cluster preferably reflects the hierarchical structure of the verb cluster, either from left to right or from right to left.

It is evident that the impact of this principle grows as the number of verbs in the cluster increases. While the number of logically possible orders increases drastically as verb clusters become longer (two orders are possible in a two-verb cluster, six in a three-verb cluster and as many as 24 in a four-verb cluster), the number of actually attested orders as opposed to the logically possible ones becomes much smaller in clusters of four and more verbs. As we have seen in the examples above, verb order becomes a more important cue for the hearer in determining the internal hierarchy as verb clusters become longer, especially when it is needed to disambiguate between different possible combinations of the same auxiliary verbs. On the basis of the broad overview sketched in the previous section, I expect this principle not only to apply in Dutch dialects, but also in other West-Germanic languages and dialects.

Note that, according to the definition of this principle in (43), both orders in two-verb clusters (1-2 and 2-1) are equally acceptable. Three-verb clusters, on the other hand, have options that deviate from the underlying hierarchy, i.e. the orders 1-3-2, 2-1-3, 2-3-1 and 3-1-2. The principle RUH predicts that the orders 1-2-3 and 3-2-1 are preferred above the other orders.

This prediction is only partially confirmed in our data. The 1-2-3 order is preferred in many syntagms, but not across the board: there is the exception of syntagms with a main verb participle, where 3-1-2 is used more widely than 1-2-3. Also, the mirror image 3-2-1, even though it reflects the underlying hierarchy of the verbs as well, is absolutely dispreferred in all the syntagms. The next subsection proposes a second principle that accounts for both these facts.

5.6.2 *Avoiding syntagm ambiguity*

As shown in the previous section, our Late Middle Dutch results are highly reminiscent of Present-day German and its dialects. A number of linguists have explained the avoidance of strictly left-branching clusters (3-2-1) in German in terms of parser-friendliness. The first account in this spirit was Lötscher's (1978), who states that left-branching structures are harder to process than right-branching structures, because of their higher demands on working memory.

Bei linksverzweigenden Strukturen kann die Einbettungstiefe erst am Schluß einer Analyse der ganzen Struktur bekannt sein, d.h. die vorhergehende Analyse muß vor allem bezüglich der semantischen Interpretation zwischengespeichert werden, bis die gesamte Struktur mit dem obersten Element erkannt ist. Nun aber werden Konstituenten offenbar in ihrer Analyse immer so früh wie möglich abzuschließen versucht, m. a. W., während einer Satzanalyse werden immer so wenig Schritte wie möglich zwischengespeichert, weil das Zwischenspeichern eines vorläufigen Ergebnisses das Kurzzeitgedächtnis ziemlich schnell überfordert. Extensive Linksverzweigungen sind also schwierig wegen der Überforderung des Kurzzeitgedächtnisses und wegen der überdurchschnittlichen Notwendigkeit der Re-Analyse von schon analysiertem Material („back tracking“) infolge zu vorzeitiger Beendigung einer Analyse

(In left-branching structures, the level of embeddedness can only be known at the end of an analysis of the whole structure, i.e., the preceding analysis, especially in terms of semantic interpretation, must be stored temporarily until the whole structure is recognized at the highest element. But evidently, attempts will be made in the analysis of constituents to always construct them as quickly as possible; in other words, as few steps as possible are temporarily stored during the analysis of a sentence because such storage of a temporary outcome overtaxes the short-term memory rather quickly. Thus extensive left-branching is difficult due to excessive demands on short-term memory and to the greater-than-average necessity for the reanalysis of material that has already been analyzed (‘back

tracking'), as a result of the premature termination of an analysis.) (Lötscher 1978:12, cited and translated by Dubenion-Smith 2008:236).

A similar claim is made by Haider (2003), who argues that complex left-branching verb clusters undergo verb raising (i.e. get partial or complete right-branching order) because center embedded structures are costlier for the human parser. Kaufmann (2007) relates the difference between two-verb clusters and longer clusters to a claim in Hawkins (2004) that parsing in an OV language becomes easier for the hearer if the verbal element(s) appear earlier in the linear sequence. Kaufmann (2007) applies this to the *finite* verb, which, when it appears early in the cluster, effectively results in a (more) right-branching verb order. As an explanation, Kaufmann argues that there may be a processing advantage of the variant with a preposed finite verb, but does not answer the question what the precise nature of this advantage is.

Building on the studies discussed above, I propose a principle that, together with the principle Reflect Underlying Hierarchy discussed in the previous section, captures the three generalisations on verb order in three-verb clusters put forward earlier in this chapter. This principle is called 'Avoid Syntagm Ambiguity' and works as follows:

- (44) **Avoid Syntagm Ambiguity (ASA):** the internal order of the verb cluster is such that verbs providing clues for the syntagm are uttered first, which allows the nature of the syntagm to be determined unambiguously as quickly as possible, so that the hearer can start parsing the correct syntactic and semantic structure.

To some extent this principle is inspired by a principle introduced by Hawkins (1994): the 'Principle of Early Immediate constituents', which states that words and constituents are ordered in such a way that syntactic groupings, which Hawkins calls Phrasal Combination Domains, can be produced and recognised as quickly and as efficiently as possible (Hawkins 1994; 2004:107).

First of all, the ASA principle offers an explanation for the strong tendency of the finite verb to precede the second verb in the hierarchy in longer clusters (generalisation 2 above). A crucial fact in this respect is the similarity between two constructions that were relatively new in Late Middle Dutch grammar, the double modal construction with *zullen* (see chapter 6) and the IPP-construction (see chapter 7). Example (45a) shows the IPP-construction with the modal verb *mogen* ‘may’ and example (45b) is a double modal construction with the same verb.

(45a) ... *dat hij een lied heeft¹ mogen² zingen³*
 that he a song has may.IPP sing.INF
 ‘that he has been allowed to sing a song’

(45b) ... *dat hij een lied zal¹ mogen² zingen³*
 that he a song shall may.INF sing.INF
 ‘that he will be allowed to sing a song’

Although the semantics of the two constructions are quite different, they are homophonous except for the finite verb. This is due to the IPP-effect in (45a), which requires *mogen* to appear as an infinitive rather than as a participle when it is the second in a hierarchy of three verbs. Therefore, it is now only the finite verb *heeft* that marks the perfect tense on *mogen* in (45a), and it is the finite verb *zal* in (45b) which indicates that *mogen* is a true infinitive and not an IPP. It follows that the orders with the finite verb first (1-2-3 and 1-3-2) fulfill the ASA better than the alternative verb orders, because the crucial distinction between an IPP-syntagm and a double modal syntagm can be made right away.

Like the RUH-principle, I expect the ASA-principle to apply across Dutch dialects and other West-Germanic languages and dialects. As a test, let us consider whether these principles may also account for some facts observed in Present-Day German. The 1-3-2 order in Present-day German is obligatory in IPP-clusters, while it is optional in double modal clusters (see the examples

(36) and (37) earlier in this chapter). Example (46) is a Present-day Standard German double modal construction with 3-2-1 order. In this case, the hearer will immediately disregard the possibility of an IPP-cluster, since IPP-clusters always have the perfective auxiliary (*haben* 'have') first. In other words, it is the specialisation of verb order in the German IPP-construction that allows for the 3-2-1 order in (46) to give enough information about the syntagm (i.e. it is a double infinitive cluster and not an IPP-cluster) so that the *ASA* principle is not violated.

- (46) *daß er ihn sehen³ können² wird¹*
 that he him see can will
 'that he will be able to see him' (Kaufmann 2007:152)

Next, I will illustrate how the *ASA* principle can help account for the deviating verb order 3-1-2 in three-verb clusters where the main verb (V3) is a participle. Our late Middle Dutch data set shows that past participles are practically always the most deeply embedded element in the verb cluster, just like in Present-Day Dutch (Hoeksema 1988). Preposing of the participle as in (47) below should therefore not affect the usefulness of word order as a clue for the hearer.

- (47) *Item die nu ende tot anderen tyden bode gecoren³*
 Likewise whom now and until other times messenger chosen
sel¹ worden²
 shall become.INF
 'Likewise he who shall be chosen (to be) messenger now and until other times' (Utrechts, 1520)

Even though the principle *Reflect Underlying Hierarchy* is violated, the hearer can rely on the morphosyntactic clue given by the participle to know that this is the lowest verb in the cluster. In addition, the participle provides a clue to the

syntagm that is being used. On the assumption that the participle (V3) contains as much information about the nature of the syntagm as the finite verb (V1) does, it follows that speakers may evaluate the order 3-1-2 as an equally good candidate as the strictly linear order 1-2-3 according to the ASA principle. The same reasoning applies to the variation between 1-2-3-4 order and 4-1-2-3 order in the syntagm illustrated in (48a) and (48b). Again, positioning the participle early on in the verb cluster does not affect the ability of the hearer to reconstruct as quickly as possible the hierarchy of the verbs.

(48a) *dat het huis zou¹ kunnen² worden³ gesloopt⁴*
 that the house should can become demolished
 'that the house could be demolished'

(48b) *dat het huis gesloopt⁴ zou¹ kunnen² worden³*
 that the house demolished should can become
 '... that the house could be demolished'

The ASA principle also predicts that the 3-1-2 order is a slightly better candidate for clusters with a main verb participle than the 3-2-1 order. This is illustrated in the examples below.

(49a) *dat ze het huis gebouwd² hebben¹*
 that they the house built PTCP have.3PL
 'that they have built the house'

(49b) *dat ze het huis gebouwd³ hebben² zullen¹*
 that they the house built.PTCP have.INF will.3PL
 'that they will have built the house'

(49c) *dat ze het huis gebouwd³ zullen¹ hebben²*
 that they the house built.PTCP will.3PL have.INF
 'that they will have built the house'

Since the infinitive *hebben* ‘have’ is homophonous with the finite plural form, the cluster in (49b) is ambiguous between a two- and a three-verb cluster until the last verb in the cluster is uttered. If the hearer analyses *hebben* as a finite plural, the structure is analysed as a two- verb cluster; if *hebben* is analysed as an infinitive, the structure is a three-verb cluster. It follows that (49c), in which the hearer knows that (at least) a third verb has to be uttered, is more felicitous according to the ASA principle.

We could go even further and predict on the basis of the ASA principle that the dispreference for 3-2-1 order is more prevalent in clusters with a plural finite verb than in clusters with a singular finite verb. If the subject is singular instead of plural, the finite verb gets a singular ending and is no longer homophonous with the infinitive. Therefore if a singular subject is uttered before the verb cluster, this creates the expectation of a singular finite verb, so that when an infinitive is uttered, the speaker does not confuse this infinitive with a finite plural. It follows that a construction like (50) would be less problematic for ASA than (49b) above.

- (50) *dat hij het huis gebouwd³ hebben² zal¹*
 that they the house built have.INF will.3SG

This expectation is to a certain extent supported by our data. As shown earlier in this chapter, clusters with 3-2-1 order are very rare in our data set. Of the seven tokens of the syntagm illustrated in (50) above (*zullen* complemented by a perfective auxiliary and a participle main verb; MOD-PERF-PTCP), six involve a singular instead of a plural subject. Obviously more substantial data research is needed to test this prediction.

The principles that are introduced in this section suggest that speakers prefer structures that are easier to process for the hearer. In other words, this implies that speakers weigh the interest of the hearer in their choice between order variants. This assumption, referred to as speaker altruism, is not uncontroversial (see Dubenion-Smith 2008: 237 for discussion). On the other

hand it is also possible that structures that are easier to process for the hearer are also easier to produce, in which case speaker processing may also play a role. The question whether speaker altruism or speaker processing is involved in the principles described here, remains to be resolved.

5.7 Conclusion

This chapter has shown that clusters of three and more verbs have order preferences that differ fundamentally from those in clusters of two verbs, in Present-day Germanic languages as well as in older dialects. Our Late Middle Dutch corpus data shows that as verb clusters become longer, they have more right-branching order than two-verb clusters. More specifically, there is a preference for the finite verb to be preposed in such long clusters. There is the exception of long clusters with a participle as the most deeply embedded verb, in which it is often the participle that is preposed. It was shown that similar differences between two-verb clusters and longer verb clusters can be witnessed in West-Germanic languages in general.

In order to account for these facts, I have suggested in this chapter that verb order is affected by the interplay between two principles. The first, *Reflect Underlying Hierarchy*, requires that the surface structure of verb clusters reflects their internal hierarchy, a tendency which, as we have seen, becomes stronger as verb clusters become longer. The second, *Avoid Syntagm Ambiguity*, stipulates that elements of the verb cluster that help the hearer determine the nature of the syntagm, such as the finite verb, appear early in the cluster. These two principles together account for the difference in order preferences between two-, three- and four-verb clusters. As we will argue in the diachronic scenario sketched in chapter 8, the increased frequency of long verb clusters, especially double infinitive clusters, may have influenced to a certain extent the preferences for two-verb clusters. First, however, we will discuss two innovations that have contributed to the rise of these double infinitive clusters: the double modal construction in chapter 6 and the IPP-construction in chapter 7.

Chapter 6 – The development of double modal constructions in Dutch

6.1 Introduction

The previous chapter has given an account of verb order in clusters of three and more verbs in late Middle Dutch. One of the syntagms that was discussed, was a combination of the modal auxiliary *zullen* ‘shall’ with another modal auxiliary (e.g. *moeten* ‘must’ or *mogen* ‘may’) and an infinitive. Such combinations of two or three modal verbs are quite ordinary in Present-Day Dutch. Examples are given in (1) and (2) below.

- (1) *Hij vindt dat ik die namen moet¹ kunnen² onthouden³*

He thinks that I those names must can.INF remember

‘He thinks that I must be able to remember those names.’

- (2) *Hij vindt dat ik die namen zou¹ moeten² kunnen³ onthouden⁴*

He thinks that I those names should must.INF can.INF remember

‘He thinks that I should be able to remember those names.’

Coupé and Van Kemenade (2009) demonstrate that such constructions were innovative in Early Middle Dutch. They also show that the modal infinitives typical of such constructions were very infrequent and probably even nonexistent in earlier stages of Dutch and Germanic. This is an intriguing phenomenon: although the development of Dutch modal verbs is quite clearly a grammaticalisation process, the inception of the double modal construction is atypical in the sense that the paradigm of the modal seems to be extended rather than reduced in the grammaticalisation process. This chapter follows up on the findings in Coupé and Van Kemenade (2009) and relates them to the larger picture of the diachronic development of Dutch verb clusters.

The increasing frequency of modal infinitives has remained largely unnoticed in previous work, apart from some isolated remarks by some scholars. Van Ostayen and Nuyts (2004), for example, who give a detailed account of the diachrony of Dutch modal *kunnen* (the cognate of English *can*), note a characteristic that they find hard to account for from a grammaticalisationist point of view: the frequency of the infinitive *kunnen* drastically increases in the period between Middle Dutch and Early Modern Dutch. According to the authors, one expects the infinitival form of a grammaticalising auxiliary to disappear, as supposedly happened with the English modals (Van Ostayen and Nuyts 2004: 42). They conclude: 'het is niet erg duidelijk op welke manier deze cijfers i.v.m. de infinitieven geduid kunnen worden, in termen van de gangbare visies op grammaticalisatie' (it is unclear how these figures concerning the infinitives can be interpreted, in terms of current views of grammaticalisation'-my translation). I will show that it is not only the infinitive of *kunnen* that is on the rise, but also the infinitival form of the other modal verbs.

Our data suggests that the increasing frequency of modal infinitives is due to their occurrence in a single context, which can be characterised as follows: [*zullen* + modal infinitive + main verb]. I will argue in this chapter that this construction is a Middle Dutch innovation. We will see that somewhere in the Early Middle Dutch period modal verbs *mogen* 'may' and *moeten* 'must' seem to have extended their morphological paradigm with infinitives. This development is indeed rather unusual in view of what we know about grammaticalisation processes, which often involve reduction rather than extension.

This chapter explores the morphosyntactic and semantic developments involved in this innovation. The next section, 6.2., gives preliminary definitions of some concepts related to modality and modal verbs that will be used in this chapter. A detailed account of the specific morphosyntactic changes observed in Dutch is given in 6.3, also building on evidence from other Early Germanic languages, and comparing them to the morphosyntactic development of English modal verbs. We will trace back the beginning of the change in Dutch to the 13th

C., after which a gradual increase in frequency of modal infinitives can be witnessed. Section 6.5. discusses in more detail the semantic changes that took place in Dutch modals between the Old Dutch and the late Middle Dutch period, especially the development of *zullen*. Section 6.6. provides a historical scenario that connects the observed morphosyntactic and semantic changes and proposes an account for the diverging paths of grammaticalisation in Dutch and English. A conclusion is given in 6.7.

6.2 Definitions

In spite of the vast literature on the topic, there is no general agreement on exactly how to define the concept of modality. Kiefer (1994:2515) states that: ‘The essence of ‘modality’ consists in the relativization of the validity of sentence meanings to a set of possible worlds.’ As Nuyts (2005) notes, the concept of modality is actually an umbrella term for a number of semantic notions that are so different that one may wonder whether it is desirable to speak of a single concept in the first place. The uniform treatment of these notions in the literature is probably inspired by the fact that many languages, including Dutch, have a system of grammatical expressions – notably modal verbs – that is specifically designed to express those notions (Sweetser 1990:49).

Many typologies have been proposed to classify the types of modality that can be expressed by modal verbs, or indeed, any other linguistic expression of modality (e.g. Coates 1983, Sweetser 1990, Palmer 2001, Nuyts 2004). In order to avoid terminological confusion, some basic concepts will be defined briefly in this section. In doing so, we will only concern ourselves with those concepts that are relevant to the discussion of modal verbs and disregard other linguistic means to express modality such as adverbs and particles. Moreover, the focus in this chapter is on those modal verbs that have been considered the ‘core’ modals in the West-Germanic languages, i.e. *will*, *can*, *must*, *may* and *shall*, and their Dutch cognates.

In the literature on modal verbs (e.g. Lyons 1977, Coates 1983, Sweetser 1990), two major types of modality are often distinguished, i.e. epistemic and root modality. Epistemic modality expresses statement of the speaker's attitude towards the truth value of a proposition: whether the proposition is necessarily true, probably true, possibly true, etc. Instances of epistemic modality can be characterised as subjective, since they involve the opinion of one person, the speaker. For example, *zal* in (3) below indicates that the speaker thinks that the proposition [David is at home by now] is probably true. Note that the epistemic modal has a broad semantic scope since it predicates over the whole proposition.

- (3) *David zal inmiddels wel thuis zijn*
 David will by-now PART at-home be
 'I reckon that David will be at home by know'

The term 'root modal' generally refers to all instances of modal verbs that are non-epistemic (see Lyons 1977, Coates 1983, Sweetser 1990)¹⁸. When modal verbs are used with root meaning, their scope is narrower: they predicate over the verb phrase rather than over the whole proposition. Within non-epistemic modality, a subdivision is made into deontic modality and dynamic modality. Deontic modality is typically concerned with 'the necessity or possibility of acts performed by morally responsible agents' (Lyons 1977:823). It has to do with the (lack) of freedom of these agents to act in a given situation with respect to a given authority. The major types of deontic modality are permission and obligation, in other words, what is possible and what is necessary given this authority. In declarative sentences the authority is often the speaker, like the trainer in (4), but it may also be somebody else, e.g. (5).

¹⁸ See however Bybee et al 1994, Van der Auwera and Plungian 1998 and Boland 2006 for slightly different interpretations of the term 'root modal'

- (4) *'Je mag ophouden met roeien', zei de trainer*
 You may stop with rowing said the trainer
 'You may stop rowing, the trainer said'
- (5) *We moeten op papa wachten, zei Anna tegen haar broer*
 We must for daddy wait said Anna to her brother
 'We must wait for daddy', Anna said to her brother'

In the case of dynamic modality, on the other hand, the possibility or necessity of events is not evaluated with respect to an authority, but with respect to a circumstantial frame of reference. Most prototypically this type of modality refers to the abilities or volition of the first argument of the main verb, i.e. the primary participant of a state of affairs. Dynamic modality is therefore said to be more subject-oriented (and hence less speaker- or proposition-oriented) than deontic or epistemic modality. Examples are *wil* in (6) and *kan* in (7).

- (6) *Peter wil altijd het kruiswoordraadsel invullen als hij de krant leest*
 Peter wants always the crosswords fill-in if he the paper reads
 'Peter always wants to fill in the crosswords when he reads the paper.'
- (7) *Fiona kan al heel goed vioolspelen voor een zevenjarige*
 Fiona can already very well violin-play for a seven-year-old.
 'Fiona can play the violin very well for a seven-year old.'

A concept that is closely related to modality, is 'mood'. 'Mood' traditionally refers to opinions or attitudes that are often expressed in verbal morphology (Palmer 1986:21). Within mood, as within modality, different categories can be distinguished on semantic grounds, such as evaluative mood, evidential mood, and irrealis. 'Irrealis' is the most relevant mood category for the discussion in this chapter. Many languages have a grammaticalised irrealis/realis distinction. In these languages, expressions with hypothetical or counterfactual

interpretations typically get irrealis marking (e.g. Mithun 1995:376, Boland 2006:87). Note, however, that counterfactuality may also be marked by modal auxiliaries, for example the past tense of *zullen* ('*zou*') in Dutch and *would* in English. Again, the modal verb *zullen* in (8) scopes over the whole proposition: it implies that the proposition [Lotte writes him a letter] is non-factual.

- (8) *Als ze tijd had, zou Lotte hem een brief schrijven.*
 If she time had should Lotte him a letter write
 'If she had time, Lotte would write him a letter'

The world-state 'Lotte writes him a letter' refers to a situation that could have occurred, but does not occur since the condition in the conditional clause 'if she had time' is not fulfilled. The modal verb *zullen* expresses this counterfactuality. Now that some preliminary concepts have been defined for the purpose of this study, we can turn our attention to the historical development of Dutch modal verbs.

6.3 Morphosyntactic change

6.3.1 Grammaticalisation of modal verbs in English and Dutch

While much of the existing historical syntactic work on modal verbs focuses on the developments in English, comparatively little is known about the development of the Dutch modals. It is well-known that the English modal verbs *can*, *must*, *may* and *shall* have evolved from lexical verbs to functional items which no longer behave as regular verbs. This 'grammaticalisation' process involves loss of inflection (Present-day English modals are invariably inflectionless) and increasing restrictions on the grammatical contexts in which they may appear (Present-day English modals are always finite and always have a verbal complement; never a non-verbal complement like a direct object NP). It also involves reanalysis: the original lexical verbs are to an increasing extent analysed as (non-verbal) functional items. There is no consensus, however, on the exact nature of this historical development. There are linguists

who claim that this reanalysis occurred abruptly in the course of a generation (e.g. Lighthfoot 1979), while others assume that it was a slower and more gradual process in which syntactic and semantic changes interact with each other (e.g. Plank 1984, Van Kemenade 1993, Heine 2003, Hopper & Traugott 2003).

The table below shows that Dutch modals (still) have some lexical characteristics that are lacking in their English counterparts, e.g. (plural) inflection, NP complementation and the ability to appear as an infinitive, which may yield a double modal construction (for a detailed discussion of differences between English and Dutch modal verbs, see also Barbiers 1995a, Abraham 2002).

	English	Dutch
(a) plural inflection	must, can, may, shall (sg. = pl.)	moet/moeten; kan/kunnen; mag/mogen; zal/zullen
(b) NP complement	*I can English, *she may a cookie	Ik kan Engels, ze mag een koekje
(c) infinitive	*He must can work	Hij moet kunnen werken

Table 6.1: Mismatches between English and Dutch modal verbs

The contrast in (c) is particularly relevant for the case study in this chapter. Modals in Present-day English, at least in standard varieties are invariably finite and hence do not feature in double modal constructions. The more complex modal meanings that are expressed by double modals in Dutch, as in (9), are often expressed in English by combinations of ‘real’ modals (*can, must, may, shall*) and semi-auxiliaries like *have to* and *be able to*.

- (9) *Hij vindt dat ik die namen moet kunnen onthouden*
 He thinks that I those names must can.INF remember
 ‘He thinks that I should be able to remember those names.’

Middle English on the other hand did have sporadic sequences of modal verbs that are very reminiscent of the double modals in Present-Day Dutch:

(10) *Patt I shall cunnenn cwemenn Godd*

That I shall can.INF please God

‘That I will be able to please God’ (Ormulum, ed. White, p. 101, l. 7)

By the early 16thC., these double modal constructions disappear quickly in English. At the same time, the lexical properties of modal verbs (a) and (b) listed in table 6.1 are disappearing. It has therefore often been assumed, implicitly or explicitly, that the double modal construction was just one of these lexical properties of modal verbs that was lost at some point in the history of English. I will show in the following sections that this view is untenable and that the double modal constructions were innovative in Middle English as well as in Middle Dutch. This innovation eventually caught on in Dutch, but not in English.¹⁹

As a starting point for our discussion, we will explain in the next sections what is known about the pre-modals in the common ancestor Proto-Germanic and about modal verbs in the Early Germanic languages.

6.3.2 Pre-modals in Proto-Germanic

The Germanic ancestors of the English and Dutch modals, which we will henceforth refer to as ‘pre-modals’, have been reconstructed as *skul-, *mot-, *mag-, *kun- and *wilj-. The first four of these belonged to an inflectional class that is generally referred to as ‘preterite presents’. This is a set of verbs of which the present stem is derived from the Proto-Indo-European perfect. In

¹⁹ Although interesting in their own right, we do not take into consideration double modal constructions like ‘we might could see that movie’ which are characteristic of Southern American and Scottish dialects. These are probably of later date and are different from the [*zullen* + modal infinitive + main verb] construction discussed in this chapter, because they involve two finite past tense forms being combined into one Verb Phrase.

these verbs, the perfect forms were probably reinterpreted as present tense forms, creating new verbs with a derived meaning (see, e.g., Lehmann 1994:32, Ringe 2006:153, Kotin 2008). Similar developments are attested in other Indo-European languages. In Greek, for example, the original perfect tense *οἶδα* 'I have seen' was also reinterpreted as a present-tense verb meaning 'I know'. These verbs have the form of a perfect tense but have been reanalysed as 'new' present tense verbs.

Modals were not the only verbs in this class of preterite-present verbs. Other members were *wit-* 'to know', *aig-* 'to possess', *dug-* 'to be of value', *unn-* 'to grant', *þurf-* 'to need', *mun-* 'to think, remember', and *benug-* 'to suffice'. They are semantically coherent to some extent, in that they typically refer to a state that has come into being as a result of an event, thus more or less reflecting the original function of the Proto-Indo-European perfect (Traugott and Dasher 2002: 132-133, Ringe 2006:153). The only pre-modal not featuring in this list is *will-, which is a reinterpreted optative rather than a preterite.

Being preterite-presents, the Germanic pre-modals may well have had a defective paradigm, lacking nonfinite forms. We will see in the next section that this is to a certain extent still visible in the surviving records of Early Germanic dialects.

6.3.3 The finiteness restriction in Early Germanic dialects

Coupé and Van Kemenade (2009) investigated the ancestors of today's modals in Early Germanic dialects. Looking at Old English or Old High German corpus texts, we found that modal verbs in these texts had some characteristics that are nowadays typical of lexical verbs, one of which is their syntactic complementation. Beside occurring with an infinitival complement, modals may also take a direct object only, as in (11) and (12) or a directional adverb as in (13). These complementation patterns have been lost in English, but they still survive in Present-Day Dutch and German.

- (11) *Binnan þrim nihtum cunne ic his mihta*
 within three nights can.sbjv I his powers
 'May I know his powers within three nights'
 (OE; Metrical Charms, 9, 14, in: ASPR)
- (12) *Uuáz múgen uuír nú mêt?*
 What may we now more
 'What more are we capable of now?'
 (OHG; Notker, Boeth.Cons., III 181, 8)
- (13) *and he begeat ða leafe þæt he of þam lande moste*
 and he got then leave that he from the country must.sbjv
 'and then he got permission to leave the country'
 (OE; ÆLS I.5.328)

Note, by the way, that the meanings of the modal verbs above are different from their meanings in Present-Day English and Dutch. *Can* in example (11) has the lexical meaning 'to know, to understand', *múgen* in (12) has a dynamic sense of 'being capable' and *must* in (13) is used in the deontic sense of permission rather than obligation.

The examples above furthermore illustrate the fact that Early Germanic modals still had inflection (though less than regular verbs), as opposed to their Present-Day English descendants. Not only are they inflected in the present and past tense, but also, like any regular verb, they appear in the subjunctive. Modals also readily occur with subjunctive mood inflection in Old High German and Old Saxon, as illustrated in (14) and (15) respectively.

- (14) *thaz thu úns es muazis thánkon*
 that you us it must.SBJV thank
 'that you should thank us for it' (OHG.; Otfrid's Evangelienbuch.2, 24, 38)

- (15) *ne hi thes lôn sculi, fora godes ôgun geld antfâhan*
 not he the reward shall.SBJV for gods ought money receive
 'He should not (get) the reward, for the gods ought to receive money'
 (OS: Heliand XXIII, 1968)

While this mood inflection has been lost in English and Dutch, it still survives in Present-Day German *sollte(n)*, *müsste(n)*, *möchte(n)*, *könnte(n)* and *wollte(n)*.

In line with these more lexical characteristics of modal verbs in Early Germanic languages, one could easily suppose (as some linguists have) that Old English 'pre-modals' had non-finite morphology just like any regular verb. Warner (1993) however has emphasised the lack of evidence for the existence of non-finite forms of the modals *must* and *shall* in Old English. Nagle (1993), in addition, argues that the double modal constructions that sporadically occur in Middle English are not, as is for instance assumed by Lightfoot (1979), a relic from Old English. Nagle concludes, not having found any attestations of double modals in the complete Old English corpus, that they are probably a Middle English innovation. These claims fit well with Koopman's (1990) findings in the same corpus, who shows that verb sequences in Old English contain a maximum of three verbs and that if there is a modal present in such a sequence, it is always the highest verb in the hierarchy. Its verbal complement may consist of a passive or perfective auxiliary (*habban* 'have'; *beon* 'be'; *wesan* 'be'; *weorþan* 'become'), and a participle, as examples (16) and (17) show.

- (16) *Þæt Cristes ðeowdom ne sceal beon geneadad*
 that Christ's service not shall be forced
 'that Christ's wisdom must not be forced' (ÆCHom, ii.9.79.220)
- (17) *& ðe he habban wyle gehealdan & geholpen*
 and which he have wants held and helped
 'and which he wants to have held and helped' (WHom 5.107)

In other words, none of these three-verb sequences contains a non-finite modal. Given the robust frequency of these three-verb sequences, and of pre-modals more generally, these facts strongly suggest that modal infinitives were simply unavailable in Old English. In order to corroborate the linguistic evidence, or rather the absence of any linguistic evidence for modal infinitives, Warner (1993) moreover cites a passage from Ælfric's Latin Grammar: Ælfric translated the infinitive of *licere* 'may' by the passive of *alyfan* 'permit', which suggests that Old English *mot*- had a defective paradigm from the very beginning.

- (18) *licet mihi bibere* mot ic drincan
mihi licuit ic moste,
tibi licet, nobis licet, si nobis liceret gyf we moston
infinitivvm licere beon alyfed (Warner 1993:146)

In order to complete these Old English findings with data from other Early Germanic languages, Coupé and Van Kemenade (2009) investigated all the instances of pre-modals in the Gothic Bible²⁰, the Old Saxon *Heliand* and *Genesis*, and the Old High German *Tatian* and *Otfrid*. For Old Saxon and Old High German, we could rely on the detailed observations in Birkmann (1987), checking the examples in the TITUS database at the University of Frankfurt. In addition, we examined the only surviving written records of Old Lower Franconian (the closest ancestor of Dutch), i.e. the *Wachtendonckse Psalmen*, which are 10th century psalm translations (Cowan 1957). The types and tokens of pre-modals are listed in Table 6.2.

²⁰ Based on Snædal (1998).

		Finite	Infinitive	Participle
*skul-	Gothic *skul-	52	0	0
	Old Sax. *skul-	364	0	0
	OHGm. *skul-	225	0	0
	OLFr. *sulen	155	0	0
*mot-	Gothic	-----not attested-----		
	Old Sax. *mōt-	137	0	0
	OHGm. *muoz-	45	0	0
	OLFr	-----not attested-----		
*mag-	Gothic *mag-	124	0	11
	Old Sax. *mug-	245	0	0
	OHGm. *mag-/mug-	321 ²¹	0	0
	OLFr. *mag-	1	0	0
*wilj-	Gothic wilj-	108	3	16
	Old Sax. *willi-	303	1	6
	OHGm. *well-	328	0	1
	OLFr. *will-	2	0	0
*kunn-	Gothic kunn-	75	8	12
	Old Sax. *kunn-	17	0	0
	OHGm. *kunn-	6	0	0
	OLFr.	-----not attested-----		

Table 6.2: distribution of finite/non-finite pre-modals in Early Germanic sources

²¹ Birkmann counts 2 infinitives in Old High German, *mugan* and *magan*, the first of which upon closer examination turns out to be a 1st person singular:

- (a) *Zi iungisten quamun zuene lugge urcundon inti quadun: uuir gihortun inan quedentan,*
 At newest came-pl. two false witnesses and spoke: we heard him saying:
mugan ziuerfan gotes tempal thaz mit henti giuuohtaz inti after thrin tagon anderaz
 may-1sg destroy God's temple that with hand wrought and after three days other
nalles mit henti gitanaz zimbron.
 but- not with hands made build
 'At last two false witnesses came and spoke: we heard him say "I can destroy God's temple, that was wrought by hand, and after three days I can build another that is not made by hand"'

The interpretation of the second example, with *magan*, is problematic. Therefore this token is not included in the survey. It is given here for completeness' sake, however:

- (b) *Noh thaz selba ni uúaniu thesan mittilgart bifahan magan thio zi scribanne sint buoh.*
 and-not the same NEG consider-1sg this world grasp may? those who writing are books

The results in table 6.2 show that **mot-* and **skul-* are finite across the board, in Old English (e.g. Warner 1993) as well as in the other Early Germanic records. These two finite pre-modals occur with infinitival complements in all the surviving texts. The other pre-modals **mag-*, **wilj-* and **kunn-* are sporadically attested in a non-finite form (bare infinitive, to-infinitive or participle). In these cases, the pre-modals invariably have a lexical rather than a grammatical meaning, e.g. *wiljan* ‘to wish, desire’, *magan* ‘to have power’, *kunnan* ‘to know’ and never have an infinitival complement of their own (i.e., there is never a double modal). An example is (19):

- (19) *ei swaswe fauraist muns du wiljan ...*
 that just as for-is readiness to will
 ‘that as there was a readiness to desire’ (Gothic Bible; 2 Cor. 8:11)

We conclude that non-finite forms of the pre-modals were very infrequent in Early Germanic dialects, and for **skul-* and **mot-* are not attested at all. Moreover, when a pre-modal has modal meaning and takes an infinitival complement, it is *always* finite. Sequences of modal verbs are thus not attested in Early Germanic.

6.3.4 Modal infinitives in three-verb clusters: a Middle Dutch innovation

Now let us look at the innovation that took place in Middle Dutch. I have searched for attestations of modal *moeten* ‘must’ and *mogen* ‘may’ and orthographic variants in the 13th century Middle Dutch *Corpus Gysseling* (CG)²² and the 14th century *Corpus Van Reenen-Mulder* (CRM). Both corpora contain official documents, all of which are accurately dated and localised. All the official documents in both corpora were searched. It has to be borne in mind that Middle Dutch infinitives are homophonous with the finite present tense plural forms: both end in *-en*. In the oldest texts, all the

²²Apart from official documents, CG also contains a collection of 13th century literary texts, which have not been investigated in this study.

attestations of the lexical forms *mogen* ‘may’ and *moeten* ‘must’ (and their orthographic variants) are finite plural forms. The earliest attestation of a non-finite form of *mogen* in CG was found in a 1277 charter from Brussels:

- (20) *soe dat deen sonder den andren niet daer towe en sal¹ moghen² gaen³*
 so that the-one without the other not there to NEG shall **may**.INF go
 “so that the one will not be allowed to / be able to go there without the other”
 (CG, Brussels, 1277)

Later charters contain more infinitives of *mogen* and *moeten*. Table 6.3 suggests that in the case of *mogen*, the innovation took place in the course of the 13th century. Interestingly, all the attested cases of infinitival *mogen* are in the complement of modal *zullen*.

	# finite pl.	# infinitive	total	% infinitive
1230-1269	41	0	41	0.00%
1270-1299	250	38	288	13.19%
1300-1329	41	17	58	29.31%
1330-1359	47	17	64	26.56%
1360-1400	190	72	262	27.48%

Table 6.3. Attestations of the form *mogen* (including orthographic variation) in 13th and 14th century Dutch charters (CG & CRM).

Moeten is less frequent, but shows a similar pattern. The first attestation of *moeten* as an infinitive is somewhat later, in a 1292 charter from Bruges.

- (21) *So wat broedre die gaet wech van desen counvente vanden bec garden*
 so what brother that goes away from this convent of the lay-brothers
so wat so hi ghedaen heft te coste jnt ghemene couent,
 so what so he done has to costs in-the collective convent
dat sal¹ al moeten² bliuen³ jnt couent
 that shall all **must**.INF stay in-the convent

‘whichever brother leaves this convent of lay brothers, whatever expenses he has done in the convent, will have to stay in the convent’.

(GG*1124)

As with *mogen*, all the infinitival instances of *moeten* occur in the complement of modal *zullen*.

	# finite pl.	# infinitive	total	% infinitive
1230-1269	16	0	16	0,00%
1270-1299	74	4	78	5,13%
1300-1329	1	0	0	0,00%
1330-1359	0	0	0	
1360-1400	6	5	11	45,45%

Table 6.4. Attestations of the form *moeten* (including orthographic variation) in 13th and 14th century Dutch charters (CG & CRM).

Zullen itself is never attested as an infinitive. In other words, the double modal constructions attested can be characterised as follows: [*zullen* + modal infinitive + main verb]. The Dutch cognate of English *can*, i.e. *kunnen*, does not occur in this construction in our 13th and 14th C. data from CG and CRM. In fact, it is much less frequent than the other modal verbs. Presumably, it is only at a later stage that this verb appears frequently as a modal verb. We will come back to this issue in section 6.4.

It turns out that most of the cases in Table 6.3 are attested in locations in the south of the Dutch-speaking area. This may not seem particularly noteworthy since the majority of texts in the older corpora are from the southern cities, especially in CG. The CRM corpus is more regionally diversified, and does contain some instances of the construction from dialects outside the southern provinces, however not from Utrechts or Drents. The attestations of *mogen* and *moeten* that were found in Utrechts and Drents were invariably finite. Of the three dialects that are the main focus of this dissertation, the southern Brabants dialect is therefore the only one in which the

double modal construction is actually attested in the 13th and 14th centuries. I will show in section 6.3.5 that there are good reasons to assume that the innovation started in the south of the Dutch-speaking area.

6.3.5 Spread of the innovation in Late Middle Dutch

In order to track the subsequent development of the construction, I have investigated 15th and 16th century texts from the corpus *Dutch in Transition* (DiT). As indicated in the previous chapters, this corpus contains texts that are comparable to the ones in the Middle Dutch corpora CG and CRM, since the genre is legal/official. Data were collected from three well-represented areas, i.e. the provinces of Drenthe in the Northeast, Brabant in the South, and Utrecht in the centre of the Dutch-speaking area. As in the previous chapters, we refer to these three dialect groups as Drents, Brabants and Utrechts.

For this case-study, I have used the *zullen* data set that was described in chapter 3. This set consists of clauses containing a finite form of the verb *zullen*. After counting the cases where *zullen* was complemented by another modal (*moeten*, *mogen* or *kunnen*) and a main verb, it was possible to compare the frequency of the construction [*zullen* + modal infinitive + main verb] with the data obtained from CG and CRM. Table 6.4 shows that the construction is much more frequent in DiT than in the older corpora. Comparing the 15th and the 16th C. material in the DiT-corpus, it can be observed that the frequency continues to rise. At the same time, there is no significant rise in frequency of *zullen* itself. Neither do the finite forms of the other modals experience a considerable rise. In other words, the effect that we witness does not result from any of the individual modals becoming more frequent. It is really the combination of *zullen* and a modal that is innovative.

Corpus	time span	# words	<i>zullen</i> + modal + main V	
			#	#/10.000 words
CG	1230-1300	882,391	50	0.57
CRM	1300-1400	789,257	111	1.41
DiT	1400-1500	420,660 ²³	328	7.80
DiT	1500-1600	194,069	488	25.15

Table 6.5: Frequency of the [*zullen*+ modal infinitive + main verb] construction in different corpora

The relatively high number of cases attested in the DiT corpus allows us to make a more fine-grained frequency comparison between the three dialects. Table 6.6 and Figure 6.1 below indicate that Brabants was ahead of the other two dialects in the development of this innovative construction: this southern dialect already has a fairly high degree of [*zullen* + modal infinitive + main verb] constructions at the beginning of the 15th century (at least compared to the values in CG and CRM), and yet the frequency still rises dramatically in the decades that follow. Utrechts ‘catches on’ by the end of the 15th century. In the northeastern dialect of Drents, on the other hand, the innovation seems to have taken place only in the latter half of the 16th century.

	Brabants		Drents		Utrechts	
	#	#/10.000words	#	#/10.000words	#	#/10.000words
1400-1439	39	8.77	0	0.00	3	1.73
1440-1479	184	19.89	0	0.00	33	13.42
1480-1519	56	86.69	7	0.87	70	25.68
1520-1559	66	76.61	23	2.67	218	63.57
1560-1600	103	101.75	14	9.20	-	-

Table 6.6: Frequency [*zullen*+ modal infinitive +main verb] per region in Corpus DiT

²³ The number of words indicated here is the total number of words in the subset of the DiT corpus that was investigated, i.e. the texts from Brabant (Breda), Utrecht and Drenthe.

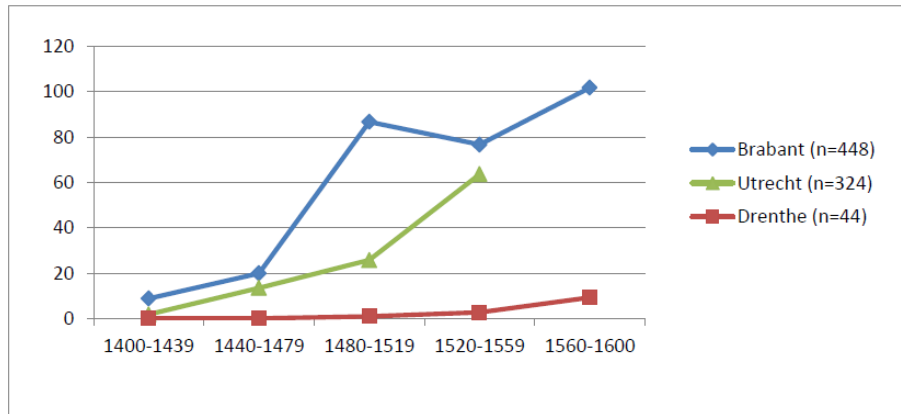


Figure 6.1. Frequency [zullen+modal infinitive +main verb] per region in Corpus DiT (#/10.000w)

In the later parts of the corpus, we also find instances of modal infinitives outside the [zullen + modal infinitive + main verb] construction. In (22), for example *mogen* is used as a *te*-infinitive.

- (22) *om der kercken oerber ende twerck van der nyer capellen te bet*
 for the church.GEN profit and the-work of the new chapels to better
voert te moegen gaan.
 further to may.INF go
 ‘So that the profit of the church and the building of the new chapel may
 proceed all the better’ (Utrechts, 1520)

The infinitive of *zullen* itself is rarely attested. Even in Present-Day Dutch it is very infrequent. The earliest examples I have found in the DiT corpus occur more than three centuries later than the first attestations of the infinitives *moeten* and *mogen*, and they invariably follow *te* ‘to’:

- (23) *Seecker Engelsman is verstaen, vermits sijn siecte, te huyse te*
 Certain Englishman is understood because his disease at house to
sullen werden getrouwt
 shall.INF be married
 'It is understood that a certain Englishman will be married at home
 because of his disease.' (DiT: Tholen, Zeeland, 1634)

Our data suggests that the paradigm extension of the Dutch modals with infinitives took place in the context of a specific construction: [*zullen* + modal verb + main verb]. Once this construction was becoming frequent, modal infinitives could also feature in other contexts. In order to find out what triggered this morphosyntactic innovation, it is interesting to observe the semantic developments of Dutch modals in the same period.

6.4 The semantic development of the Dutch modal verbs

6.4.1 Semantic changes of modals in general

Previous work has shown that there is more to the semantic evolution of grammaticalising auxiliaries than the mere loss of their referential meaning (often referred to as desemanticisation). Once a verb starts to function as a tense, aspect or modality marker, this is by no means the end of its semantic evolution. Work by Traugott and colleagues (e.g. Traugott 1989, Traugott and Dasher 2002) has revealed that while semantic change in general is rather haphazard (e.g. Durkin 2009:259-260), there may actually be some regularity in the semantic development of functional items like (modal) auxiliaries.

This regularity is characterized by Traugott as a tendency towards increasing subjectification. Linguistic items that have a basic 'lexical' meaning are often used to describe the objective world. As they grammaticalise into more functional items, these elements may develop meanings that are closer to the personal thoughts of the speaker and hence become more 'subjective'. This follows from the hypothesis that the seeds of semantic change are to be found in the speaker. Speakers draw on and exploit pragmatic meanings that arise in

interaction with the hearer, so-called ‘invited inferences’. Over time, these invited inferences may evolve into new ‘semanticised’ meanings.

As an example, Traugott and Dasher (2002) discuss the semantic evolution of English *must*. The ancestor of *must* is probably related to Germanic *mete*, cognate of Present-Day Dutch *meten* ‘to measure’. The original lexical meaning of *must* is described by Traugott and Dasher (2002:131) as ‘mete, be fitting’, which they characterise as ‘the pre-modal stage’ of *must*. In a second stage, *must* starts to develop modal meanings. More specifically, it starts off with a dynamic modal meaning, described by the authors as ‘participant-internal ability or possibility’, followed by a deontic modal meaning of ‘permission’ which in turn developed into the deontic meaning of ‘obligation’. In a third and final stage, *must* starts to develop epistemic uses. Traugott and Dasher (2002:147) state that ‘the historical development of modals conforms to the regular tendency for semantic change to follow a path to increasingly nonreferential and increasingly speaker-oriented meanings, not vice versa’.

Van Ostayen and Nuyts (2004) apply the notion of subjectification to a hierarchy of qualificational dimensions presented in Nuyts (2001), which is given in (24) below. The elements to the left of this hierarchy are considered to be more subjective and more speaker-oriented, while elements to the right are more lexical and more ‘objective’.

- (24) evidentiality > epistemic modality > (performative) deontic
modality > time > quantificational aspect/dynamic modality >
qualificational aspect (Nuyts 2001:347)

Although Nuyts (2001) indicates that this hierarchy is probably far from complete – other layers may be added and some layers, like deontic modality, are internally complex – it does reflect the scope relations between the categories involved. As Van Ostayen and Nuyts (2004:18-19) argue, these semantic scope interactions are related to the subjectification pathway. Higher in the hierarchy means wider scope, which correlates with increasing room for

personal contribution of the speaker, hence subjectification. Thus subjectification seems to go hand in hand with an increase in semantic scope.

Typological work by e.g. Bybee (1985) has shown that functional heads encoding mood, modality, tense, aspect and voice are ordered in much the same way cross-linguistically. This has led to claims by e.g. Cinque (1999) that languages have a universal structure of functional heads that is responsible for these similarities. He proposes a ‘universal hierarchy’ containing over 30 functional projections for different categories of mood, modality, aspect and tense. A shortened version of this hierarchy, including only those functional projections that relate to mood, modality and tense is given below.

- (25) [[Mood_{speech act} [Mood_{evaluative} [Mood_{evidential} Mod_{epistemic} [T(past) [T(future)
 [Mood_{irrealis} [Mod_{necessity} [Mod_{possibility} [Mod_{volition} [Mod_{obligation} [Mod_{ability/permission}
 (following Cinque 1999:81, 106)

This syntactic hierarchy proposed by Cinque turns out to be similar to the subjectification hierarchy proposed by Nuyts, although the terminology is somewhat different and more categories are discerned – within the category of dynamic modality Cinque discriminates for example between ability and volition. A striking difference between both hierarchies is that deontic modality (permission and obligation) occurs relatively high in Nuyts’s hierarchy (above time/tense) and low in Cinque’s.

Whether or not the cross-linguistic evidence for scope interactions like the ones above justifies positing an innate functional make-up as detailed as the one Cinque proposes, depends on one’s presuppositions about Universal Grammar. Be that as it may, it serves useful descriptive purposes even for linguists who do not endorse a strict view of UG (see also Traugott and Dasher 2002:148). It explains for instance some restrictions to combinations of auxiliaries. Example (26) illustrates that future (or epistemic) *zullen* can embed a deontic modal like *mogen*, but not the other way round.

(26a) *Hij zal [mogen werken]*

He shall-future may-deontic work

'He will be allowed to work.'

(26b) **Hij mag [zullen werken]*

He may-deontic shall-future work

? 'He is permitted to be in a future event where he will be working.'

The ungrammaticality of (26b) is inherent to the semantics of the two verbs. The complement of deontic *mogen* has *Dependent Time Reference* (DTR, Noonan 1985). 'A complement having DTR typically refers to a future world-state relative to the time reference of the higher predicate' (Noonan 1985:133). If *mogen* is in the past tense, the permission to work occurred in the past, if *mogen* has future tense as in (26a), the permission will take place in the future. The deontic semantics of *mogen* fits in the complement of the tense element *zullen*: *zullen* then indicates the point in time at which the deontic modality takes place. If the scope hierarchy is reversed (as in 26b), however, [*zullen werken*] becomes the complement of *mogen*. In that case, the complement of *mogen* contains a future tense reference, which is incompatible with the DTR semantics, i.e. that the complement has to occur at the time referred to in *mogen* itself. It is also incompatible with the 'permission' semantics: to permit a future event is semantically odd. For one thing, a state of affairs that is permitted should be one that the 'permittee' can control. The predicate [*zullen werken*] does not fit this requirement, since a future event definitely cannot be controlled. If someone is permitted to be in a future where he will be working, the permission is in fact meaningless. Crucially, the future reference has semantic scope over the permission and not vice versa. It is to be expected that many of the ordering effects related to a hierarchy such as (25) can be explained in terms of semantic scope.

From a diachronic point of view, it is quite clear that the developments proceed from right to left in the hierarchy. IJbema (2002), relying on previous work by Beths (1999) argues that grammaticalisation in the functional domain of the clause involves the raising of grammatical items in Cinque's hierarchy. In a formal syntactic framework,

this can be explained by the assumption that linguistic items are not allowed to go down in the hierarchy. For instance, *zullen* has climbed in the hierarchy from $\text{Mod}_{\text{obligation}}$ to T_{future} . Interpreted from a semantic point of view, the fact that the developments are from right to left (and not vice versa) suggests that grammaticalisation involves a broadening of semantic scope, which is consistent with the proposals in Nuyts (2001) and Traugott and Dasher (2002). We will see in the next section that *zullen*, as a marker of epistemic modality, irrealis and futurity, *zullen* typically gets wider scope than the other modals.

6.4.2 Semantic changes in the Dutch modal system

If modal verbs suffer from a general fuzziness in their meanings (e.g. Coates 1983), this is particularly the case in Middle Dutch, as the *Middelnederlandsch Woordenboek* (Dictionary of Middle Dutch) illustrates. The entries for the modal verbs *zullen/sullen* ('shall'), *moeten* ('must') and *mogen* 'may' all mention the fact that the meanings of these Middle Dutch verbs are often interchangeable, which also means that most of them are polysemous. To illustrate this, some citations from the *Middelnederlandsch Woordenboek* with different meanings of *moeten* are given below.

- (27) *Van dien torren gaet ... tote des soudaens torre ... ene starke yserine*
 from that tower goes to the.GEN soudaen.GEN tower a strong iron
ketene groot, so datter niemen liden moet
 chain big so that no one pass must
 'from that tower to the Soudaen tower, there is a big strong iron chain so
 that no one can pass' (dynamic, ability)
- (28) *Dit moet ic eten dor den noot*
 This must-I eat through the famine
 'I have to eat this because of the famine' (dynamic, obligation)

- (29) *Hier en moeten gheen vrouwen ingaen binnen den clooster*
 here NEG must no woman enter inside the monastery
 'Women are not allowed to enter the monastery here'
 (deontic, permission)

- (30) *Dat was ende es ende wesen moet*
 that was and is and be must
 'what was, is and will be' (future tense)

Conradie (1987:171ff) on the other hand shows that this polysemy is not haphazard. If the development of the *central* meaning of each verb is considered, there is a systematic shift on a unidirectional axis. This axis is shown in figure 6.2, where the arrows indicate a historical shift in the *central* meaning of a verb, with the starting points of the arrows corresponding to the meanings that are attested in Early Germanic languages. The blocks indicate the prototypical meaning(s) of the respective modal verbs in Present-Day Dutch.

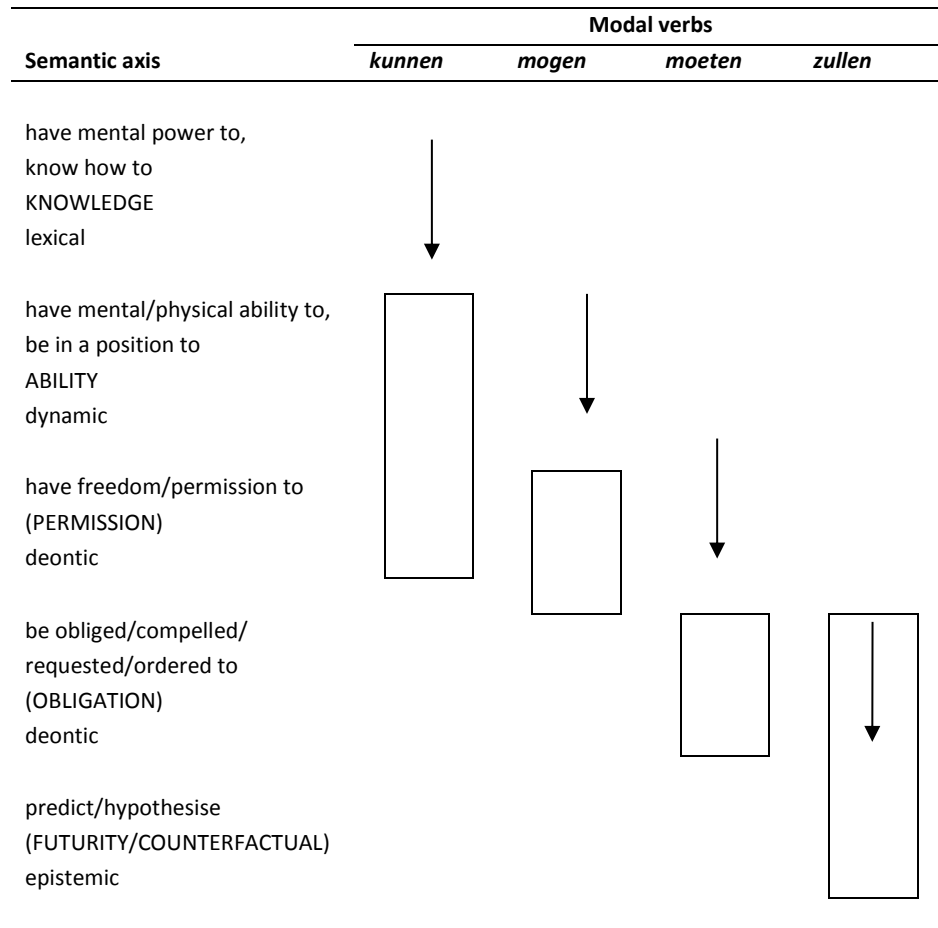


Fig 6.2: semantic development of Dutch modal auxiliaries (after Conradie 1987:172)

The diagram above shows that there is still considerable overlap in the meanings of Present-Day Dutch modal verbs, but that their central meanings have all evolved in the same direction, which is in line with the hierarchy sketched in the previous section. Early Middle Dutch *moeten* had the central meaning of permission, but shifted towards obligation, losing its original meaning in this process.

Something similar happened to *mogen*, which shifted from (dynamic) ability to (deontic) permission. At the beginning of the 15th century, examples with *mogen* can be found with both the original meaning of possibility/ability (31) and the newer meaning

of permission (32). Both examples come from the Utrecht subcorpus, which consists of statutes of local guilds. The fact that both instances are not far apart in time, with the oldest example (32) displaying the newer meaning, indicates that *mogen* was still polysemic in the early 15th C.

- (31) *Soe wat knape van onsen ambocht, die ander knapen onder hem sette te wercken,*
 So what mate of our trade that other mates under him put to work,
die verboerden een pont was elc, daer men bedraghen mach ter waerheit
 those be-fined a pound wax each where one prove may to-the truth
 'Whichever mate of our trade, who would employ other mates under him, those
 would be fined a pound of wax each, when the truth of the matter can be proven'
 (DiT: Utrechts, 1417)

- (32) *Dat alle ambachten, die nu ter tijt buyten der stadt in der stadt vryheyd*
 that all traders that now to-the time outside the city in the city-GEN domain
wonachtich zijn, die mogen daer blyven metter woon ende haer ambachten daar
 living are those may there stay with-the living and their trades there
doen, alsoolange als sy leven
 do as-long as they live
 'That all the traders, who are at this time living outside the city in the city's
 domain, those are allowed to stay and live there and engage in their trades, as
 long as they live' (DiT: Utrechts, 1400)

Zullen on the other hand develops from a deontic modal denoting obligation into a marker of epistemic modality, futurity and irrealis. Although the earlier meaning of deontic obligation is to some extent still preserved in Present-Day Dutch and its dialects, this is no longer the central meaning of *zullen*. In the present tense, *zullen* has become the standard marker of the future tense. Its past tense forms are used to express the 'future past', which often corresponds to the expression of irrealis, i.e. counterfactuality:

- (33) *Tim zou ook komen, maar hij had zich verslapen*
 Tim should also come but he had REFL overslept
 'Tim was also supposed to come, but he overslept'

Kunnen, finally, originally meant 'to know', which is the most lexical meaning in the axis. Although its central meaning in Present-Day Dutch is ability, it can also be used with the meaning of permission, as in the example below. Note that the English translation also makes use of modal *can*, the cognate of *kunnen*.

- (34) *Kan ik opruimen, of zijn jullie nog niet klaar?*
 Can I clean-up or are you not yet ready
 'Can I clean up, or are you not finished yet?'

(Haeseryn et al 1997:996)

It seems reasonable to assume that the changes in the core meanings of the individual modal verbs are related to one another, in other words, that a chain reaction has taken place. As is often the case, it is hard to determine whether we are dealing with a push-chain or a drag-chain, i.e. whether it was the semantic change of *zullen* that triggered the shift, or whether it was the introduction of the relatively young modal verb *kunnen*, or even that the change started somewhere in the middle of the chain with *mogen* or *moeten*. Further research is needed to answer this question. For an account of the possible motivations for these semantic shifts in the Dutch modal system, however, see Booij, Los & Rem (2006: 16-17, 21-22).

Regardless of the causes of this semantic shift in the Dutch modal system, it can be observed that the semantic developments of the individual modal verbs not only coincide with increasing semantic scope, but also that the chain seems to correlate with the degree of grammaticalisation of the different auxiliaries. Of all the modern Dutch modals, *zullen* is clearly the most grammaticalised one. Although most of the other modals can be used epistemically, *zullen* was the first modal verb to reach this stage. The semantic

axis illustrated in Figure 6.2 represents a cline from more lexical to more grammatical meanings. Since *zullen* was higher on the axis from the very start, it is no surprise that it was the first modal to grammaticalise into a tense marker. *Kunnen*, on the other hand, is probably the least grammaticalised of the Dutch modals. Van Ostayen and Nuyts (2004:48) note that it is very infrequently used with epistemic meaning in Present-Day Dutch, and even less so in Middle Dutch.

The difference in degree of grammaticalisation between *kunnen* and *zullen* was probably even more pronounced in Middle Dutch. Middle Dutch *kunnen* is the only modal verb that was still used with a purely lexical meaning ‘to know, to understand’. When it has this meaning, it is mostly combined with an NP direct object rather than an infinitive. *Zullen* on the other hand is systematically combined with an infinitive from the oldest use onwards. Also, *zullen* invariably has modal meaning. It is used with the implication of futurity already in the oldest ‘Dutch’ records.²⁴ Germanic had an indicative (present and past tense) and a subjunctive, but did not have any grammatical means to express future tense (Van der Horst 2008:202). Wulfila in his Gothic Bible translation alters between the present tense and the subjunctive in order to translate the original Greek future tenses. In the Old Low Franconian *Wachtendonckse Psalmen*, a psalm translation from Gothic, *zullen* is already used to translate these Gothic subjunctives.

Traugott and Dasher’s (2002:148) view that ‘the historical development of modal verbs conforms to the regular tendency for semantic change to follow a path to increasingly nonreferential and increasingly speaker-oriented meanings’ seems to be confirmed by the semantic developments of the modal verbs in Dutch. Not only are the observed meaning changes related to the degree of grammaticalisation, they are also in line with Nuyts’s (2004) subjectification cline given in the previous section. In the next section, I will

²⁴ Note that Middle Dutch in this respect is very similar to Old English, where *sculan* and *cunnan* represent two extremes on the grammaticalisation scale (e.g. Goossens 1987).

propose a historical scenario that relates these semantic developments to the morphosyntactic innovation that was discussed in 6.3.

6.5 Historical scenario

6.5.1 *Increasing scope of *zullen**

In its grammaticalisation towards a marker of epistemic modality, futurity and *irrealis*, *zullen* gets increasingly wider scope. This provides an explanation for the fact that modal infinitives start to appear under *zullen*. The widening of scope allows *zullen* to predicate over complex predicates including ability, permission and obligation. In other words, modal infinitives started to appear in the position under *zullen* simply because the widened scope of *zullen* allowed for it. Conversely, in contexts where *zullen* has in its complement a newly acquired infinitive of one of the other modal verbs *mogen*, *moeten* and *kunnen*, *zullen* has to be interpreted unambiguously as being higher up in the semantic hierarchy. Combinations of this type may thus have precipitated the grammaticalisation process of *zullen*.

The scenario I propose for Dutch is obviously different from the scenario for English. The English modal verbs *all* grammaticalised to the extent that they are no longer analysed as lexical verbs. English modals have become invariable functional items without any argument structure, which at all times have semantic scope over the rest of the Verb Phrase. Of the Dutch modals, the development of Dutch *zullen* is closest to that of the English modals. Although *zullen* still has inflection that discriminates between singular and plural (*zal* vs. *zullen*), it rarely occurs as an infinitive and whenever it occurs, it is always complemented by one or more infinitives and it invariably has scopes over the rest of cluster.

In the previous section it was shown that the innovative combinations of *zullen* and modal infinitives seem to have spread from the south of the Dutch-speaking area. If this development is indeed related to the semantic shift of modal verbs, we would expect the newer meanings of Dutch modal verbs to have their origin in the South as well. A detailed study of the regional differences with regard to this semantic shift requires further research. There are indications, however, that the assumption is on the right track. For example, the 14th century data of Booij et al (2006:13) suggest that the new

modal verb *kunnen* was more frequent in the southern regions of Brabant and Limburg than in the other provinces.²⁵ On the other hand, we expect texts from the Northeast to contain more instances of the older meanings of the modal verbs. For *zullen*, this expectation is borne out: even in the latest texts from Drenthe in the DiT corpus, *zullen* still has a clear deontic meaning:

- (35) *wijsen drost ende vier ende twintich etten, dat sich pertien **sollen***
 pronounce bailiff and four and twenty councilors that REFL parties shall
regulieren na voergaende sententie
 comply with previous sentence
 ‘the bailiff and the 24 councilors pronounce that the parties must conform to the
 aforementioned sentence.’ (Drents, 1600)

In conclusion: it is plausible that the inception and the dramatic rise of the [*zullen* + modal infinitive + main verb] construction are related to the further grammaticalisation of *zullen* from deontic modal to epistemic, future and irrealis marker.

6.5.2 Syntactic extension

First of all, let us consider the lack of infinitives in Early Germanic languages. This was probably a morphological peculiarity of a limited class of verbs, rather than a syntactic requirement. Whether or not this characteristic of the modal verbs is directly related to their status as preterite-present verbs remains to be investigated. In such a scenario, the reinterpretation of past tense forms would have yielded new, yet paradigmatically incomplete verbs. The introduction of the infinitive would then be a case of paradigmatic leveling by analogy with regular verbs. As a matter of fact,

²⁵Booij et al (2006) argue that in 13th- and 14th-century texts from Brabant, *kunnen* acts as the negative counterpart of *mogen*, i.e. *kunnen* meaning ‘ability’ is used primarily in negative contexts, while *mogen* has the same meaning in affirmative contexts. The nature of the relation between this newly-acquired meaning of *kunnen* and the semantic shift of the modal verbs however remains implicit.

we know that preterite-present verbs have levelled their paradigm to that of regular verbs in other respects, such as the development of a uniform plural for all the tense and mood categories in Dutch (Birkmann 1987:365-366). Dutch modal verbs would merely have undergone more paradigmatic levelling than their English counterparts, including the introduction of non-finite forms. Moreover, they are different from English modals in that there is no sign of a radical reanalysis by which the modals have lost their verbal status.

Traditionally, two major mechanisms have been recognised in morphosyntactic and phonological change: reanalysis and analogy. For most of the previous century, reanalysis was considered the most important factor in morphosyntactic change (e.g. Langacker 1977, Lightfoot 1979, 1991, Harris and Campbell 1995). More recently, however, research interest in the role of analogy has grown (e.g. Kiparsky 1992). The innovation of the [*zullen* + modal infinitive + main verb] construction is probably an example of analogy rather than reanalysis. The question is of course what the example construction for the analogy was. A plausible candidate is the construction with causative 'do' [*zullen* + causative infinitive + main verb], which was available in Early Middle Dutch, e.g. (36).

(36) *Si zullen sin hus doen breken*

They shall his house do break

'They will pull down his house'

(CG004,22: Ghent 1237 or shortly after)

The innovative [*zullen* + modal infinitive + main verb] construction may well be triggered by analogy with constructions like (36), which were actually quite frequent in Early Middle Dutch. The extension takes place both in terms of morphology (the introduction of non-finite forms in the paradigm) and in terms of the syntactic contexts that the modal verbs could be used in. Note, by the way, that analogy does not exclude reanalysis; as I have argued in the previous section, the introduction of the [*zullen* + modal infinitive + main verb] construction is accompanied by a

widening of scope of modal *zullen*, which may be regarded as a small-scale reanalysis of this verb and of its verbal complement.

Our case study thus suggests that the grammaticalisation of the individual modal verbs goes hand in hand with grammaticalisation of a specific construction, i.e. [*zullen* + modal infinitive + main verb]. As *zullen* grammaticalises further and increases its scope, a growing number of modal infinitives starts to feature under *zullen* in this construction.

It should be noted, however, that modal infinitives in Present-Day Dutch are not restricted to the construction [*zullen* + modal infinitive + main verb]. Combinations of *moeten* and *kunnen*, for instance, are also grammatical, as was illustrated in (1). Even the highly grammaticalised *zullen* sporadically occurs as an infinitive. Further study is needed in order to determine at what point exactly these other constructions came into use. A plausible hypothesis would be that once the [*zullen* + modal infinitive + main verb] construction had paved the way for modal infinitives, they could be used in other contexts as well. Similarly, the development of a *te*-infinitive for *zullen* could also be the result of analogy with the other modal verbs, which seem to have developed *te*-infinitives earlier.

Although the extension to new, increasingly grammatical contexts is a central topic in the grammaticalisation literature (e.g. Heine 2003), morphological extension is unexpected, since grammaticalising items typically undergo reduction. Therefore the question may be raised whether we are still dealing with a case of grammaticalisation. The fact that all the Dutch modal verbs develop from more lexical to more grammatical meanings, however, suggests that they have indeed been grammaticalised, but in a different way from the English modals (see also Coupé and Van Kemenade 2009). They have become part of a productive system of verb clustering in which an increasing number of auxiliaries (mostly bare infinitives) may be stacked. This system is characterised by a semantic hierarchy that is projected onto the syntactic chain of verbs.

6.5.3 From a synthetic to an analytic system of modality

An issue that remains to be resolved is how the developments described in this chapter relate to broader development of the Dutch verb system. From a larger diachronic perspective, Dutch has undergone a development from synthetic mood inflection to an analytic system of auxiliaries. A synthetic feature that was lost in the same period, was the subjunctive mood inflection, which is for example used to mark irrealis. Dutch has developed a periphrastic future tense with *zullen*, which also adopts functions that were previously fulfilled by this subjunctive inflection, especially in its past tense forms. This is an example of “renewal”: the general tendency for periphrastic forms to replace morphological ones over time. Processes of renewal have been shown to occur repeatedly in languages where a long historical record is available.

Hopper and Traugott (2003:9) indicate that the term “renewal” may be misleading because it suggests that there is exact functional identity between the old and the new forms, or even that the new forms fill a gap created by the loss of old forms. The cause-effect relationship is probably the other way around. When periphrastic expressions of modality started to develop, they co-existed for a while with subjunctive inflection (as is still the case in Present-Day German). The modal verbs, and especially *zullen*, probably adopted an increasing number of ‘mood’ functions, which allowed for the inflectional mood system to erode and to disappear eventually.

Subjunctive inflection on modals, when still productive, can be used to express complex meanings of mood and modality. This includes the combination of epistemic modality or irrealis with other, deontic or dynamic modal meanings in one clause. An example from Present-Day German is given in (37a), where dynamic *können* (‘can’) is used in the subjunctive mood, which adds an irrealis component to its meaning. Present-Day Dutch, on the other hand, expresses this complex modal meaning by a combination of past tense *zullen* and the infinitive of *kunnen* (37b).

(37a) *Er könnte es reparieren*

He can.SBJV it repair

‘He could repair it (He can, but he doesn’t)’

- (37b) *Hij zou het kunnen repareren*
 He should it can.INF repair
 'He could repair it (He can, but he doesn't)'

In our scenario, it is precisely this irrealis function of the subjunctive that is increasingly fulfilled by *zullen*, allowing the subjunctive mood inflection to disappear eventually. This probably happened first in two-verb clusters with *zullen*. As the innovative combination [*zullen* + modal infinitive + main verb] was on the rise, the subjunctive inflection on modal verbs eventually became obsolete.

6.6 Conclusion

The case study presented in this chapter adds a new insight to our knowledge of grammaticalisation processes. We found that the grammaticalisation of Dutch modal auxiliaries involves extension of the paradigm rather than reduction. The Dutch modals have acquired infinitival morphology, which allowed them to appear in new syntactic contexts. In other words, syntactic extension to new grammatical contexts was accompanied by extension of the morphological paradigm. This was probably achieved by analogy with regular verbs or other auxiliaries that did have nonfinite forms, especially those verbs that could be used in similar contexts under *zullen*, like causative *doen* 'do'. As I have shown, this innovation most likely had its origin in southern Dutch dialects. From there, it gradually spread to other dialects in the course of the late Middle Dutch period.

This extension of the paradigm of modal verbs is probably a result of the semantic development of the Dutch modal verbs. It is the proceeding grammaticalisation of Middle Dutch *zullen* that creates new contexts with wider scope, in which dynamic and deontic modal auxiliaries may occur. This triggers a morphosyntactic innovation that involves the extension of the paradigm of modal verbs with infinitives, which they previously did not possess. The resulting [*zullen* + modal infinitive + V] construction is able to convey complex modal meanings that were previously expressed by other linguistic means, e.g. subjunctive inflection on modal verbs.

The morphosyntactic innovation discussed has important repercussions for the verb cluster phenomena in Dutch. Once the infinitives of modal verbs were available in the double modal construction with *zullen*, they quickly started to feature in other syntactic contexts. In the next chapter, we will see an example of such a context: the IPP construction.

Chapter 7 – The rise of the IPP-construction

7.1 Introduction

The previous chapter discussed the introduction and rise of the so-called double modal construction, by which two (or more) modal verbs may be combined in one clause, thus allowing for longer verb clusters. This chapter discusses another, more well-known Middle Dutch innovation which, as I will argue, allowed for new verb combinations to arise and therefore contributed to the increasing length of verb clusters: the IPP-construction. As we have seen in chapter 2, the IPP-effect is the occurrence of an infinitive instead of a past participle in clauses like (1), where the perfective auxiliary (*hebben* or *zijn*) has another auxiliary in its complement. Such constructions occur in many West-Germanic languages and dialects, including the standard varieties of Present-day Dutch and Present-day German.

- (1) *dat hij het huis heeft¹ laten² verbouwen³*
 that he the house has let.IPP rebuild
 ‘that he has let (someone) rebuild the house’

No trace of such constructions can be found in the extant Early Germanic (Gothic, Old High German, Old Low Franconian, Old English) records (see also Coupé and Van Kemenade 2009). While previous studies have focused primarily on explanations for the unexpected morphology of the IPP-verb (e.g. *laten* instead of *gelaten* in (1) above), I will show that not only the IPP-effect itself, but the IPP-*context* as a whole was innovative, and different verbs started to feature in it at different points in time. Building on my own findings in Early and Late Middle Dutch and those in previous studies, I will sketch a scenario that explains the introduction of this new context. Crucial in this scenario is the grammaticalisation of the perfective auxiliary *hebben*.

When discussing the innovative [*zullen* + modal verb + V] construction in the previous chapter, we related this syntactic innovation to the scope increase that went along with the grammaticalisation of the modal verbs, especially *zullen*, which was progressively used as an epistemic modal, or as an irrealis and future marker and in these contexts scopes over a complex predicate. In this chapter a similar explanation will be proposed for the development of perfective *hebben*. The verb *hebben* first starts to function as a perfective auxiliary around 900. Its perfective use gradually spreads over new contexts, during which process its semantic scope increased. Eventually it perfective *hebben* starts to predicate over complex predicates. This development created a new context in which a small number of auxiliaries that were relatively advanced in their grammaticalisation process, started to appear together with their infinitival complement. The number of auxiliaries appearing in this context gradually increased. The deviating morphology of these constructions will be explained as an effect of the syntactic union between the two verbs that occur together in the complement of perfective *hebben*.

The structure of this chapter is as follows. We start with a detailed exploration of the IPP-construction in West-Germanic languages and dialects in section 7.2. The earliest attestations of the IPP-effect in Dutch will be discussed in section 7.3. Section 7.4 reports on a close examination of IPP-constructions with *hebben* in three late Middle Dutch dialects. On the basis of these data and the findings of previous scholarship, a historical scenario is proposed in section 7.5. I will round up this chapter with a conclusion in 7.6.

7.2 The IPP-construction: an exploration

This section discusses some issues which are relevant for our account of the rise of the IPP-construction, building on previous accounts of the IPP-effect. These include generalisations about the verb types involved, about the relationship between IPP and verb order, the relationship between IPP and cluster formation, and the relationship between IPP and the prefix *ge-*. At the

end of this section we will discuss different analyses of the IPP-form: either as an allomorph of the participle or as a true infinitive.

7.2.1 Verbs undergoing IPP in Present-Day varieties of Dutch and German

An important first step in any account of the IPP-effect, is to identify which (types of) verbs are involved. I will therefore start with a summary of what is known on this topic in varieties of Dutch and German.

At first sight, the situation in Present-Day German is somewhat more complicated than in Present-Day Dutch. Many verbs in German alternate between IPP and a corresponding construction with a participle, and there is considerable inter-speaker and inter-dialect variation. One of the first attempts to systematically capture this variation was made by Den Besten and Edmondson (1983), who propose a ranking of IPP-verbs in German. They argue that the core modals are the most likely to undergo IPP, followed by *brauchen* ‘need’, then *lassen* ‘let’, and then the perception verbs, which they label ‘sensory verbs’.

Although Den Besten and Edmondson’s assumptions are not supported in detail by extensive data research, the idea of a hierarchy is adopted in subsequent scholarship. Schmid (2005) has investigated grammaticality judgements of speakers from different German and Dutch dialects. These judgement data indicate that, although West-Germanic dialects have different preferences with regard to the types of verbs that may undergo IPP, there is indeed a system in these preferences. Schmid (2005:106) proposes the following hierarchy, which is slightly different from the cline proposed by Den Besten and Edmondson (1983).

- (2) causatives < modals < perception verbs < benefactives < duratives < inchoatives < control verbs

Present-day Dutch examples of all these verb types in the IPP-construction are given in (3a-g).

- (3a) *dat hij het huis heeft **laten** verbouwen*
 that he the house has let.IPP rebuild
 ‘that he has let (someone) rebuild the house’ (causative)
- (3b) *dat hij het huis heeft **kunnen** verbouwen*
 that he the house has can.IPP rebuild
 ‘that he has been able to rebuild the house’ (modal)
- (3c) *dat hij het huis heeft **horen** verbouwen*
 that he the house has hear.IPP rebuild
 ‘that he has heard (someone) rebuild the house’ (perception verb)
- (3d) *dat hij het huis heeft **helpen** verbouwen*
 that he the house has help.IPP rebuild
 ‘that he has helped (someone) rebuild the house’ (benefactive)
- (3e) *dat hij is **blijven** verbouwen*
 that he is stay.IPP rebuild
 ‘that he has kept on rebuilding’ (durative)
- (3f) *dat hij het huis was **beginnen** te verbouwen*
 that he the house was begin.IPP rebuild
 ‘that he has begun to rebuild the house’ (inchoative)
- (3g) *dat hij het huis heeft **proberen** te verbouwen*
 that he the house has try.IPP to rebuild
 ‘that he has tried to rebuild the house’ (control verb)

The hierarchy is implicational according to Schmid (2005): a dialect that displays the IPP-effect with benefactives, for example, will also have it with the

verb types to the left of this category. Differences between dialects are thus due to different cut-off points for both obligatory IPP and optional IPP in each dialect. Standard German, for example, has obligatory IPP with causatives and modals, optional IPP with perception verbs and benefactives, and no IPP with the remaining verb classes. Standard Dutch on the other hand, has obligatory IPP with all the verb types except inchoatives and control verbs, for which IPP is mostly optional. The examples below illustrate that *beginnen* ‘begin’ and *proberen* ‘try’ may also be used without IPP, as opposed to (3f) and (3g) above in which the IPP-effect does occur.

- (4) *dat hij het huis was **begonnen** te verbouwen*
 that he the house was begin.PTCP rebuild
 ‘that he has begun to rebuild the house’ (inchoative)
- (5) *dat hij het huis heeft **geprobeerd** te verbouwen*
 that he the house has try.PTCP to rebuild
 ‘that he has tried to rebuild the house’ (control verb)

Since Schmid’s (2005) hierarchy is founded only on grammaticality judgements of a small number of speakers, it is probably a simplified description of the linguistic facts. It does not reflect the variation that may exist within categories, for example. Nevertheless, it does provide us with a rough idea of which verb types are most and least likely to undergo IPP. The question of course is what the underlying cause is of the likelihood to undergo IPP. Schmid (2005:106) suggests that the hierarchy relates to increasing ‘main verb properties’ of the verb types. In other words, the occurrence of the IPP-effect is related to the degree of grammaticalisation of the verb. Similar suggestions have been put forward by Den Besten and Edmondson (1983:178) and Askedal (1991).

As argued in chapter two of this dissertation, the concept ‘auxiliary’ as we use it in this study involves a gradient scale rather than a binary opposition auxiliary - main verb. We saw the grammaticalisation of auxiliaries or, more

specifically, auxiliation, involves a gradual loss of lexical meaning. Recall that we also associated this process with a reduction of the syntactic complement of auxiliaries, which results in a monoclausal structure, by which the auxiliary eventually loses its own argument structure and becomes a tight syntactic unit with its verbal complement. The auxiliaries on the leftmost side of the hierarchy, causatives and modal verbs, may be considered to be rather far advanced in this process: causatives often have little more semantic content than the addition of an extra participant to the argument structure of the main verb, and modals as we saw in the previous chapter fulfil (grammatical) functions like dynamic modality, deontic modality, epistemic modality or irrealis mood. Both categories may therefore be considered to have lost (part of) their lexical meaning. Also, modals and causatives are invariably complemented by a bare infinitive from the earliest Dutch records onwards, which indicates that they are also far advanced in the reduction of the complement size.

The control verbs on the opposite side clearly have more lexical content than the other categories, and may therefore be considered to be less auxiliary-like. Dutch control verbs like *proberen* 'try' and *durven* 'dare' moreover have a larger-size verbal complement than modals and causatives, typically a *te*-infinitive. As we saw, the IPP-effect is optional for these verbs in Dutch, which suggests that they are in a transitional phase in which they can be used both as a lexical verb with a full clausal complement and as an auxiliary. Other verbs in this category, like *besluiten* 'decide' and *beloven* 'promise' do not display the IPP-effect (yet).

The verb classes situated in between these two poles are perceptive, benefactive and durative verbs²⁶. While the meaning of these verbs is still rather lexical, several of them allow a bare infinitival complement. Some of

²⁶ Note that Schmid (2005) also includes posture verbs like *zitten* 'sit', *staan* 'stand', *liggen* 'lie' and *lopen* 'walk' in the category of duratives.

them have variation between a bare infinitival and a *te*-infinitive complement, e.g. benefactive *helpen* and durative *zitten*:

- (6a) *dat hij mij helpt schoon (te) maken*
 that he me helps clean to make
 'that he helps me to clean'
- (6b) *dat hij mij zal helpen schoon (te) maken*
 that he me shall help.INF clean to make
 'that he will help me to clean'
- (6c) *dat hij mij heeft helpen schoon (?te) maken*
 that he me has help.IPP clean to make
 'that he will help me to clean'
- (7a) *dat hij zit *(te) werken*
 that he sits to work
 'that he is working'
- (7b) *dat hij zal zitten (te) werken*
 that he shall sit.INF to work
 'that he will be working'
- (7c) *dat hij heeft zitten (te) werken*
 that he has sit.IPP to work
 'that he has been working'

Interestingly, a bare infinitival complement (without *te*) seems to become more acceptable with verbs like *helpen* (benefactive) and *zitten* (posture/durative) (and for that matter, also with control verbs like *proberen* 'try' and inchoatives like *beginnen* 'begin') when these verbs feature in a three-verb cluster as examples (6b), (6c), (7b) and (7c) above illustrate (see also Haeseryn et al 1997: 1043-4044). This indicates again that the occurrence of the IPP-effect correlates with the degree of 'auxiliation' of the second verb in the cluster, at least when we suppose that further grammaticalisation involves a smaller complement size, i.e. a bare infinitive instead of a *te*-infinitive. Further in this

chapter we will argue that the occurrence of the IPP-effect is an indication that the IPP-verb forms a tight syntactic unit with its infinitival complement, arguably even a compound verb.

While the IPP-effect typically occurs with verbs that take an infinitival complement, and hence in clusters of three or more verbs, Den Besten and Edmondson (1983:174) claim that some dialects allow something like the IPP-effect with modal verbs in two-verb clusters. This may give the impression that the overt presence of an infinitival complement is not a strict prerequisite for the occurrence of IPP, which would weaken our hypothesis that the IPP-effect correlates with the degree of auxiliatation. They give the following examples, cited from Grimm (1969/1898):

- (8a) *das hat meine Emilia nicht wollen*
 that has my Emilia not want.IPP?
 'That my Emilia has not wanted' (Lessing's *Emilia Galotti*)
- (8b) *darjegen heft de marggraff nicht khonen*
 against.that has the margrave not can.IPP?
 'The margrave has not been able to stand that'
- (Grimm 1969/1898:195; dialects not mentioned)

Schmid (2005: 13) discusses similar facts from three Swiss German dialects: Bernese German, Zürich German and Sankt Gallen German. An example is given in (9).

- (9) *I ha das immer wöle*
 I have that always want.IPP?
 'I have always wanted that'
- (Zürich German, Schmid 2005: 13)

Apparently, these Swiss German dialects have the construction with an (apparent) infinitive also in two-verb clusters, at least with modal verbs. The

perfect tense of a modal verb is thus always construed with an infinitive, whether the modal itself takes an infinitival complement or not. It has been assumed, however, that this is because the past participle of modals does not exist in these Swiss German dialects, or alternatively that the forms for the participle and the infinitive are homophonous (e.g. Vikner 2001:81). Since this phenomenon only seems to occur with modal verbs and only in a limited number of dialects, these cases will not be considered central to our discussion of the IPP-effect. The generalisation is that the IPP-effect occurs primarily with auxiliaries that take an infinitival complement.

7.2.2 Verbs undergoing IPP in earlier varieties of Dutch and German

Under the assumption that the IPP-effect was an innovation at some point, for which a certain degree of grammaticalisation of the auxiliary was necessary, an interesting question is whether the present-day hierarchies of IPP-verbs reflect a diachronic development in which the leftmost categories were the first to acquire this innovative feature. In fact, this is exactly what Den Besten and Edmondson (1983:160, footnote 1) assume. On the basis of their hierarchy, they expect that the IPP-effect originated with modal verbs, although they readily admit that findings in historical records are at odds with this assumption, which they somewhat hesitantly attribute to the unreliability of written documents for linguistic research. We may conclude from this that in order to determine whether hierarchies of IPP-verbs indeed correlate with a diachronic development, it is vital to obtain reliable data on early IPP-constructions.

Now let us look at the historical data discussed in earlier literature. The quest for early IPP-constructions has been a topic of linguistic research for over a century. Kurrelmeyer (1910) discusses the earliest tokens of IPP in Middle German texts. According to his data, IPP is attested first with the verbs *tun* 'do',

lassen 'let'²⁷, *heissen* 'order', *hören* 'hear', *helfen* 'help', and *müssen* 'must'. Of these five verbs, *tun* and *hören* are the only ones that are attested frequently in the 13th C. Middle German examples with both verbs are given below.

- (10) *Han wir disen brief dun besegelen.*
 have we this letter do.IPP seal
 'We have made (someone) seal this letter' (Cologne 1259)
- (11) *Ir habt es ofte horen sagen*
 you have it often hear.IPP say
 'You have often heard it being said'

Somewhat later the IPP-effect is also found with *sehen* 'see' and with modal *türren* 'dare'. The other modals *mögen* 'may, can', *wollen* 'want', *können* 'can', *sollen* 'shall' and *dürfen* 'may' do not surface in the IPP-construction until the 15th C. In other words, modal verbs seem to be later than causatives and even later than some perception verbs in acquiring the IPP-effect. This makes it unlikely that the modal verbs played a crucial role in the origin of the IPP-effect, as Den Besten and Edmondson (1983) assume. The previous chapter has made it clear that modal verbs were lacking nonfinite forms in Early Germanic, which may explain why they were not attested earlier in a perfective construction in Middle Dutch.

Van Helten (1892) offers an exhaustive list of IPP-contexts in Middle Dutch. His examples include modal verbs (*dorren* 'dare', *mogen* 'may', *connen* 'can', *willen* 'want', *moeten* 'must'), causative verbs (*doen* 'do', *laten* 'let', *heten* 'order'), benefactive *helpen* 'help', aspectual/inchoative *gaen* 'go' and *varen* 'go, move', durative *bliven* 'stay', *sitten* 'sit' and *liggen* 'lie', and finally *leren* 'learn', *wanen* 'think, consider' *dunken* 'appear (to someone)', *beginnen* 'begin' and

²⁷ Kurrelmeyer (1910:162) notes that it is unclear whether the tokens with *lassen* should be analysed as an infinitive or a participle, since the prefixless participle *lâzen* is attested well into the 14th C.

plegen ‘tend (to)’. It turns out that most of the verbs listed above are attested in (late) Middle Dutch both with IPP and the corresponding participle construction, which suggests that there was an initial stage in which the IPP-effect was optional. An exception is *helpen*, which is found exclusively with IPP. Some examples are given below. The (a)-examples have IPP, the corresponding (b)-examples use the past participle of the same verb.

(12a) *daer ik hebbe liggen beiden*

where I have lie.IPP wait

‘where I lay waiting’

(12b) *alsi (...) hadden gelegen Onder hen II haerre minnen plegen*

as.they had lie.PTCP under them II their love commit

‘As they had lain, making love between the two of them’

(13a) *hadde her Hector tot nu moghen leven*

had sir Hector until now may.IPP live

‘If sir Hector had been able to live until now / If sir Hector had still been alive’

(13b) *Dat enech man hadde gemogen Jegen hem in stride gedogen*

that any man had may.PTCP against him in battle tolerate

‘that any man had been able to withstand him in battle’

(14a) *die al mine ridders heft doen sneven*

who all my knights has do.IPP fall

‘Who has made all my knights fall’

(14b) *Daer hadde-ne Saul ghedaen vaen*

there had-him Saul do.PTCP catch

‘There Saul had made him catch’

(Van Helten 1892)

Note that all the examples above are taken from literary texts. It is possible that the choice between the infinitive and the participle in some cases may have been influenced by poetic considerations such as rhyme and/or metre. In (12b)

for example the past participle *gelegen* fits the rhyme scheme whereas the corresponding infinitive *liggen* would not. The same goes for *ghedaen* versus *doen* (14b). If we take into account that the IPP-verb selects a bare infinitival complement and the participle selects a full clausal complement, the choice for the participle *gemogen* in (13b) may be also explained as a poetic choice: if the writer had used an IPP-construction with *mogen*, the verbs *mogen* and *gedogen* would probably have been adjacent. In this case, the combination of rhyme and metre may have motivated the writer to use the participle construction.

The exact chronology and geographical distribution of these IPP-constructions, as well as the textual references, remain implicit in Van Helten's paper. While the data at our disposal do seem to confirm that the IPP-effect occurred with a growing number of auxiliaries in the course of the Middle Dutch period, thorough diachronic corpus studies of the IPP-construction are lacking both in Dutch and in German, which constitutes a crucial gap in our knowledge of early IPP-verbs. The first (unpublished) endeavour to provide a systematic inventory of Middle Dutch IPP-verbs was made by Van Dijk (2004), whose results will be discussed and complemented with my own corpus data further in this chapter.

7.2.3 IPP and verb order

It has often been mentioned in the literature that there is a correlation between the IPP-effect and the internal order of verbs in the cluster. We have discussed verb order in the IPP-context in chapter two. The dialect map in Figure 2.1 has illustrated the possible ordering options for the IPP-context in Dutch dialects. We have not discussed in any detail, however, how the different ordering patterns relate to the presence or absence of the IPP-effect. This section will explore in more detail the different verb orders that are attested in the IPP-context in the West-Germanic dialects, summarising the available literature and dialect atlas data. After having illustrated the facts with examples from the different languages and dialects, we will discuss what the relationship between verb order and the occurrence or absence of IPP tells us about IPP-clusters.

It should be noted that by *IPP-context*, I refer to contexts where IPP is theoretically possible. This is the case whenever a perfective auxiliary (*hebben* or *zijn*) is complemented by a verb (V2) that may feature as an auxiliary taking an infinitival complement. As we will see, this includes constructions in which V2 displays the IPP-effect, but also parallel cases where V2 occurs as a participle instead of an infinitive. In other words, the notion ‘IPP-context’ is neutral with regard to whether the IPP-effect actually occurs or not.

A correlation between verb order and the occurrence or absence of IPP has especially been noticed in publications on Present-day Standard German and German dialects. This is not surprising since a) IPP for many verbs is optional in German, and b) IPP-clusters in German have an internal order that deviates from the left-branching order (2-1 or 3-2-1) that is mostly found in German verb clusters. Examples (15a-b) illustrate that clusters with the IPP-effect (instead of the corresponding participle in German display the so-called *haben*-Umstellung or Oberfeldumstellung (1-3-2), and clusters without it have 3-2-1 order.

(15a) *daß er sie hat¹ rufen³ hören²*
 that he her has call.INF hear.IPP

(15b) *daß er sie rufen³ gehört² hat¹*
 that he her call.INF hear.PTCP has
 ‘that he has heard her call’

(Present-day German; Schmid 2005: 48)

Now let us turn to Dutch. The regular order for IPP-clusters in Present-day Standard Dutch is 1-2-3, which is not deviant: the 1-2-3 order is the canonical verb order in other types of three-verb clusters as well. Dutch dialects however show variation with regard to verb order and with regard to the occurrence of the IPP-effect. Dialectological studies have shown that the occurrence of IPP indeed correlates with the internal order of the cluster, in such a way that dialects without the IPP-effect usually have left-branching order (3-2-1) and

dialects with the IPP-effect employ either the right-branching order (1-2-3) or mixed orders. This correlation between verb order and IPP was signaled by Weijnen (1966:320), after which the topic has been pursued by e.g. Hoekstra (1994) and De Schutter (1995, 2000).

It turns out that cross-linguistically, *all* the six theoretically possible orders for three-verb clusters actually occur in the IPP-context. To begin with, both the strictly left-branching (3-2-1) and the strictly right-branching order (1-2-3) are attested in the IPP-context. The 3-2-1- order is common in many dialects in the north and northeast of the Netherlands (Barbiers 2005b:245), as well as in Frisian. Constructions with this order almost invariably lack the IPP-effect. A Frisian example of a cluster with 3-2-1 order without the IPP-effect is given below.

- (16) *dat er it boek lêze³ kind² hat¹* (Frisian)
 that he the book read.INF can.PTCP had
 'that he could have read the book'

On the basis of the existing literature, the following generalisation can be made about this verb order in the IPP-context:

- (17) The IPP-effect does not occur in strictly left-branching clusters (3-2-1).

This generalisation is confirmed in most West-Germanic languages and dialects. Dutch has IPP and does not display strictly left-branching order, German does have 3-2-1 order but disprefers it in IPP-clusters. Frisian and Low German, on the other hand, typically have 3-2-1 order in verb clusters and lack the possibility of IPP.

It has been shown, however, that (17) is a statistical rather than an absolute generalisation (e.g. Wurmbrand 2004, Zwart 2007). Blom and Hoekstra (1996:76) provide counterexamples from Achterhoeks, a dialect spoken in the east of the province of Gelderland, which show that the IPP-effect

is optional in 3-2-1 clusters (18a-b). As in most other Dutch dialects, the IPP-effect in Achterhoeks is obligatory in clusters with 1-2-3 order (18c-d).

(18a) *dat ik schrievm³ willn² had¹* (Achterhoeks)

that I write.INF want.IPP had

(18b) *dat ik schrievm³ ewild² had¹*

that I write.INF want.PTCP had

(18c) *dat ik had¹ willn² schrievm³*

that I had want.IPP write.INF

(18d) **dat ik had¹ ewild² schrievm³*

that I had want.PTCP write.INF

all: 'that I had wanted to write'

The optionality in these dialects in terms of verb order (1-2-3 and 3-2-1) as well as in terms of the choice between the IPP-construction and the participle construction is explained by De Schutter (2000) in terms of incomplete borrowing. These phenomena are attested in dialects that are in between two relatively homogenous dialect areas: an area with 1-2-3 order and IPP, and an area with 3-2-1 order without IPP. De Schutter hypothesises that it is possible for such transitional dialects to borrow the IPP-effect but without the corresponding order. Conversely, it is also possible for dialects to copy a verb order pattern without adopting the concomitant morphology.

Other counterexamples are found in Swiss German dialects. Some speakers of these dialects accept IPP-clusters with 3-2-1 order. Unlike the Achterhoeks examples above, the verb *lassen* in the example below lacks the alternative participle construction (Schmid 2005:37).

(19) *dass er en 't Medizin trinke³ loo² hat¹* (Sankt Gallen German)

that he him the medicin drink.inf let.IPP had

Such counterexamples seem rare; the IPP-effect is much more common in clusters with right-branching order (1-2-3) and with mixed orders.

The right-branching order 1-2-3 is typical for Dutch, as well as for many Dutch dialects (e.g. Barbiers 2005b:243-245). It is also the canonical order for three-verb clusters in Swiss dialects like Bernese German, Zürich German and Sankt Gallen German (e.g. Schmid 2005:81), all of which has the IPP-effect. A second generalisation, which is the reverse of (17), can be phrased as follows:

(20) IPP occurs without exception in clusters with 1-2-3 order

(Zwart 2007:79)

While the generalisation in (17) was shown to be statistical rather than absolute, it is harder to find counterexamples to (20). An apparent exception is signalled by De Schutter (2000:214). In this example, the verb order is 1-2-3, yet V2 occurs as a participle instead of an IPP.

(21) *dat het is¹ begonnen² te regenen⁽³⁾*

that it is begin.PTCP to rain

that it has started to rain

However, this example involves a construction in which the middle verb in the cluster has a *te*-infinitive instead of a bare infinitive as its complement. As I have argued in previous chapters, such three-verb clusters with a *te*-infinitive should probably be analysed as two-verb clusters with an extraposed clausal complement. We will come back to this in the next section.

Some of the mixed orders also correlate with the occurrence of the IPP-effect, although generalisations about mixed orders should be put somewhat more carefully, since the information at our disposal is more diffuse. The 1-3-2 order that is typical for German only sporadically occurs in Dutch dialects (Barbiers 2005b:243-245). Hoekstra (1994) shows that it is the canonical order for IPP-clusters in the Zaans dialect.

- (22) *Me vrouw heb welderes ezeid dat ik domenie had¹ worre³ moete²*
 My wife has sometime said.PTCP that I reverend had become.INF must.IPP
 ‘My wife has said sometimes that I should have become reverend’
 (Zaans, Hoekstra 1994:134)

The order 1-3-2 in the IPP-context almost invariably correlates with occurrence of IPP (De Schutter 2000:212). The only known counterexample is found in the Achterhoeks dialect, where the construction with IPP and the corresponding construction with a participle are both grammatical.

- (23) *omdat ik gaorne/geerne had¹ komm³ ewild²/ wiln²*
 because I gladly had come.INF want.PTCP want.IPP
 (Achterhoeks, Hoekstra & Blom 1996:76)

An order that occurs quite frequently in the IPP-context is 2-3-1, illustrated in (24). This order is common in West-Flemish, as well as in many other Dutch dialects spoken in Belgium and, interestingly, is restricted to the IPP-context. In other words, it does not occur in other types of three-verb clusters.

- (24) *da Valère nie norus willen² komen³ eet¹*
 that Valère not to-house want.IPP come has
 ‘that Valère has not wanted to come home.’
 (West-Flemish; Haegeman 1994:521)

Previous research shows that the 2-3-1 order in the IPP-context correlates with the occurrence of the IPP-effect rather than the corresponding participle construction (e.g. De Schutter 2000:212-213). De Schutter (2000) notes an interesting counterexample, i.e. the use of *weest* with 2-3-1 order in (East) Flemish and Brabantic dialects, as illustrated in (25).

- (25) *dat 'm vandaog(e) weest² vissen³ 'et¹*
 that he today be.PTCP fish.INF has
 'that he has gone fishing today' (East Flemish, De Schutter 2000:213)

The form *weest* here is a prefixless participle of the verb *zijn* 'to be'. This may be considered a special case for several reasons: first, this phenomenon only occurs with the verb *zijn* and not with other verbs. Second, these dialects use the prefixless participle *weest* only in this context. Third, the corresponding infinitive *wezen*, that is used in this context in Standard Dutch instead of the regular infinitive *zijn*, is actually absent in the southern Dutch dialects, which suggests that the prefixless participles acts as a substitute for this infinitive (for discussion, see De Schutter 1974)²⁸. Overall, we may conclude that the 2-3-1 order is typical of constructions with IPP rather than with a participle.

As for the mixed order 3-1-2, the atlas data discussed in Barbiers (2005b:243-245) and Barbiers et al (2008) shows that this order occurs very marginally in the IPP-context in some Dutch dialects, especially along the eastern border with Germany. Hoekstra (1994:135-137) cites examples of such clusters with this order in the Zaans dialect (which is located in the west of the Dutch speaking area), e.g.

- (26) *dat ze de keuningin met de bus deur de streek raie³ hewwe¹ lete²*
 that they the queen with the bus through the region drive have let.IPP
 'that they have let the queen drive through the region in a bus'
 (Zaans, Hoekstra 1994)

All the known examples with 3-1-2 order in the IPP-context display the IPP-effect, but given the very low frequency of this order, it is hard to determine whether this correlation is absolute or statistical.

²⁸ Other dialects employ the hybrid form *weesten*, which appears to be formed by addition of the infinitival ending *-en* to the prefixless participle *weest*.

The order 2-1-3, finally, is not attested in Dutch dialects in the IPP-context. As Zwart (2007) also discusses, this order is found in some other West-Germanic dialects like Samatimeric (Mileck 1997), Luxemburgish (Bruch 1973), Austrian Bavarian dialects (Patocka 1997) and Sankt Gallen German (Schmid 2005). This order occurs invariably *without* IPP. Two examples are given below.

- (27) *dass er sie ghört² hät¹ ruefe⁽³⁾*

that he her heard has call

‘that he has heard her call’

(Sankt Gallen German; Schmid 2005: 46)

- (28) *... obs de hollänesch geléiert² hues¹ schwätzen⁽³⁾*

whether you Dutch learnt.PTCP have speak.INF

‘whether you have learnt to speak Dutch’

(Luxemburgisch, Bruch 1973: 95)

Zwart (2007), following Mileck (1997), suggests that verbs like *see* and *learn* in such cases select a clausal infinitive (‘Satzwertige Infinitiv’), which – quite unusually – appears without the complementiser *zu* ‘to’ (hence the superscribed index “3” between brackets). The verbs *hören* ‘hear’ and *leieren* ‘learn’ in these examples supposedly have a larger size complement, even though superficially, they have a bare infinitive complement. This suggests that these examples represent a less grammaticalised use of the verbs *hören* and *leieren*. The verbal complex should not be analysed as a three-verb cluster, but as a two-verb cluster, in which the participle (*ghört*, *geléiert*) acts as a main verb rather than as an auxiliary, getting a clausal instead of a bare infinitival complement. Note once again that such a construction is much more common if the main verb is a *te*- or *zu*-infinitive, which is illustrated with examples from Dutch (29) and German (30) below.

(29) *dat hij gedreigd² heeft¹ op te stappen⁽³⁾*

that he threatened.PTCP has up to step

‘that he has threatened to quit’.

(30) *dass es aufgehört² hat¹ zu regnen⁽³⁾*

that it stop. PTCP has to rain

‘that it has stopped raining’

It should be noted that is no independent evidence that Zwart’s (2007) analysis is along the right lines. What makes assumption attractive, however, is that it allows us to maintain the generalisation that participles embed a full clausal complement instead of a bare infinitive. We will come back to this in the next section.

Summarising the above, the different ordering options in the IPP-context are given in table 7.1. It is indicated for each option whether the IPP-construction and/or the participle construction are possible in the West-Germanic languages and dialects.

Order	IPP-construction	Participle construction
1-2-3	v	-
1-3-2	v	-
2-1-(3)	-	v
2-3-1	v	-
3-1-2	(v)	-
(3)-2-1	(v)	v

Table 7.1: Correlation between verb order and the occurrence of IPP in West-Germanic languages and dialects; v = occurs, (v) = occurs marginally, - = does not occur

As De Schutter (2000) signalled, it seems that adjacency of the restructuring verb V2 and its verbal complement V3 promotes the IPP-effect. De Schutter (2000:219-222) proposes a set of three rules that according to him capture the variation in Dutch dialects:

- (31a) adjacency of 2 and 3 (whether 2-3 or 3-2) promotes the IPP-effect
- (31b) adjacency of 1 and 2 (whether 2-1 or 1-2) disfavors the IPP-effect
- (31c) when both (31a) and (31b) apply, the rightmost adjacency is the decisive factor, i.e. with 1-2-3 order the IPP-effect is expected, with 3-2-1 order IPP is predicted not to occur

Rule (31a) correctly predicts that IPP occurs with 1-2-3, 1-3-2 and 2-3-1. Rule (31b) predicts that IPP is dispreferred with 2-1-3 order, and, according to De Schutter (2000), also with 3-1-2 order. The third rule is needed to explain the difference between 1-2-3 and 3-2-1. De Schutter explains the optionality of IPP in 3-2-1 clusters in terms of incomplete borrowing, as discussed earlier in this section. A complicating factor in De Schutter's account is that he treats *te*-infinitives on a par with bare infinitives. His generalisation that 3-1-2 clusters typically have the participle construction, is based on facts like (32).

- (32) *dat ze de was te drogen³ hebben¹ gehangen²*
 that they the laundry to dry have hang.PTCP
 'that they have hanged the laundry to dry'

I have argued earlier in this dissertation that constructions like the one above should actually be analysed as a two-verb cluster with an intraposed clausal complement. Since the 3-1-2 order is little discussed in the literature, I do not know of any participle constructions with 3-1-2 order with a bare infinitive instead of a *te*-infinitive. As I have shown earlier in this section, there are languages that use this order *with* IPP, however, which would be problematic for De Schutter's account. The claim that adjacency of V1 and V2 disfavors IPP (rule (31b)) is therefore founded on a rather thin basis. Rule (31a), on the other hand, proves to be quite solid. This supports our assumption that V2 and V3, both being bare infinitives, behave as a compound verb in the construction with IPP (and, crucially, *not* in the corresponding participle construction).

The correlation between the 1-2-3 order and the occurrence of the IPP-effect (and, conversely, of the 3-2-1 order and the participle construction), which De Schutter explains by stipulating rule (31c), may be explained on different grounds. It is obvious from the literature that verb clusters displaying the IPP-effect disprefer the strictly left-branching order 3-2-1. Some studies – especially those about IPP in German – convey the impression that this dispreference is limited to IPP-clusters, which is certainly not the case. Noteworthy exceptions are Askedal (1991:12), Kathol (1996, 1998) and Wurmbrand (2005), who point out that the issue of the *Ersatzinfinitiv* should be regarded separately from the issue of verb order, since similar verb order phenomena apply in German verb clusters with *werden* or a modal verb as the highest verb in the hierarchy, e.g.

(33) *weil er dann nicht wird¹ kommen³ können².*

since he then not will come can.INF

‘since he will not be able to come then’

As discussed in chapter 5, many languages and dialects which have rigid left-branching verb order in two-verb clusters (2-1) disprefer the strictly left-branching order (3-2-1) in clusters of three and more verbs, especially in clusters with infinitives. We have explained the tendency to prepose the finite verb in such longer verb clusters by stipulating the principle *Avoid Syntagm Ambiguity (ASA)*. The generalisation in (17), i.e. that the IPP-effect is rarely combined with 3-2-1 order, was explained by this principle as well. In other words, the correlation between the IPP-effect and verb order results from the fact that the IPP-effect typically occurs in multi-verb clusters. We have seen that the participle equivalent in the IPP-context does occur frequently with 3-2-1 order, however. We will argue in the next section that such constructions are less cluster-like than those with IPP.

In conclusion, although most correlations between verb order and IPP are statistical rather than absolute, the following generalisations seem to apply cross-linguistically: dialects with 1-2-3 order invariably have IPP; dialects

lacking IPP, on the other hand, typically have strictly left-branching (3-2-1) verb order. In areas on the border of both varieties, contact systems may occur which combine 3-2-1 order with IPP. In most cases however, if IPP does occur in a language or dialect that typically has 3-2-1 order in verb clusters, the verb order in IPP-clusters deviates from this pattern. This probably relates to the fact that IPP typically appears in multi-verb clusters, which, as we saw in chapter 5, disfavour strictly left-branching order regardless of the cluster type. Finally, as De Schutter (2000) notes, IPP-constructions almost invariably involve adjacency of the IPP-verb and its infinitival complement (i.e., V2 and V3). In the next section, it will become clear that the correlations between verb order and IPP cannot be considered separately from the issue of cluster formation.

7.2.4 IPP and cluster formation

A number of scholars have assumed, implicitly or explicitly, that the IPP-effect is inextricably bound to cluster formation (e.g. Bennis and Hoekstra 1989, Rutten 1991, Zwart 2007, Hinterhölzl 2009). This hypothesis provides a good starting point for an analysis of both constructions that occur in the IPP-context: the construction with IPP and the corresponding construction with a participle. I will argue in this section that sequences of verbs that display the IPP-effect form a close syntactic unit that is truly a three-verb cluster. Verb sequences that use the participle in such contexts, on the other hand, should not be analysed as 'real three-verb clusters'. This hypothesis can be phrased as follows.

- (34) The IPP-effect occurs if and only if the verb in the immediate complement of the possible IPP-verb is part of the same clause and hence part of the verb cluster.

Under this assumption, the corresponding construction with a participle should not be analysed as a three-verb cluster, but rather as a two-verb cluster with a

clausal complement. This hypothesis is supported by the verb ordering facts discussed in the previous section. For example, the verb order 2-1-(3) occurs only if V2 is a participle. Recall furthermore that V2 and V3 are (nearly) always adjacent in constructions with IPP, suggesting that they form a close unit in those clusters.

The difference between the construction with and the construction without IPP is best visible with verbs that have optional IPP. Dutch *proberen* ‘try’, for example, is acceptable as an IPP-verb for many speakers of Dutch, although some have a clear preference for the participle construction. Interestingly, IPP is possible even when *proberen* is complemented by a *te*-infinitive, which means that our hypothesis should actually allow for three-verb clusters with a *te*-infinitive as the third verb. If we explore the different ordering possibilities of *proberen* with and without IPP, we find a rather complex picture.

(35a) *dat Tim Ellen een cadeau had¹ proberen² (te) geven³*

that Tim Ellen a present had try.IPP to give

(35b) *dat Tim Ellen had¹ proberen² een cadeau (te) geven³*

that Tim Ellen had try.IPP a present to give

(35c) *dat Tim had¹ geprobeerd² (om) Ellen een cadeau te geven⁽³⁾*

that Tim had tried.PTCP COMP Ellen a present to give

(35d) *dat Tim Ellen een cadeau had¹ geprobeerd² (*om) te geven⁽³⁾*

that Tim Ellen a present had tried.PTCP COMP to give

(35e) *dat Tim Ellen had¹ geprobeerd² (*om) een cadeau te geven⁽³⁾*

that Tim Ellen had tried.PTCP COMP a present to give

All: ‘that Tim had tried to give Ellen a present’

As can be seen in the examples above, the occurrence of the IPP-effect does not necessarily correlate with superficial coherence of the verb cluster. The construction in (35a), with IPP and with *proberen* adjacent to the main verb (*te*) *geven* ‘give’, may be analysed straightforwardly as a verb cluster. Note that *te* is

optional in this context. Example (35b) only differs from (35a) in that the direct object *een cadeau* occurs in between *proberen* and the main verb. This construction is not allowed in Standard Dutch grammar, but is grammatical in nonstandard varieties, mostly southern dialects, which have optional cluster interruption (e.g. Barbiers et al 2008).

Now let us turn to the examples with the past participle of *geprobeerd*, which according to the hypothesis in (34) are in fact two-verb clusters rather than three-verb clusters. (35c) is unproblematic: since the whole complement of *proberen* appears in one chunk to the right of the participle, this complement may be analysed as a clausal object. This assumption is reinforced by the fact that insertion of the complementiser *om* is optional. The intermediate constructions in (35d) and (35e), finally, are more problematic for our generalisation. Apart from the occurrence of a past participle, there is no superficial difference between (35d) and (35a). Likewise, (35e) is identical to (35b) except for the form *geprobeerd*. Note also that insertion of *om* is ungrammatical in these clauses, just as in the examples with IPP, which we have just called three-verb clusters. Such constructions have traditionally been labelled ‘the third construction’ (e.g. Hartevelde and Hoekstra 1999).

The facts about *proberen* at first sight do not provide any decisive argument pro or contra cluster formation. Interrupted and coherent verb clusters are possible with both forms of *proberen*. This may raise the suspicion that “anything goes”, which would weaken the hypothesis in (34). A crucial argument however is that (35b) is only possible in dialects that allow non-verbal material to occur between the elements of the verb cluster, not only in IPP-constructions but also in other contexts. In this respect it is fundamentally different from the ‘third construction’ in (35d) and (35e), which occurs in the whole Dutch language area (e.g. Barbiers et al 2008:37-38) and is also grammatical in Standard Dutch. Another difference is that the ‘third construction’ exclusively appears with verbs that select a *te*-infinitive (e.g. (35d) and (35e), while IPP is the only option with auxiliaries that invariably

take a bare infinitival complement, like modal *willen* in (36) (see also Barbiers et al 2008:28).

(36a) **dat Jan Marie heeft¹ gewild² naar huis brengen³*

that Jan Marie has want.PTCP to house bring

(36b) *dat Jan Marie heeft¹ willen² naar huis brengen³*

that Jan Marie has want.IPP to house bring

both: 'that Jan has wanted to bring Mary home'

The considerations above provide support for the hypothesis in (34). It follows that sequences like in (35b) and (36b) should be analysed as real verb clusters even though the verb sequence is interrupted, precisely because *proberen* and *willen* appear as infinitives. The examples with the past participle of *proberen*, on the other hand, should be analysed as two-verb clusters with a clausal complement. This illustrates that *proberen* is a hybrid verb in the middle of a grammaticalisation process from lexical verb to auxiliary: when it is used as an auxiliary it clusters with the main verb and undergoes IPP if it is in the complement of perfective *hebben*. On the other hand it may also (still) function as a main verb taking a clausal complement or 'Satzwertige Infinitiv'. In that case, it appears as a regular past participle in the perfect. We may conclude from this that the IPP-effect in some cases may function a diagnostic to determine whether a sequence of verbs should be analysed as a monoclausal construction. The hypothesis given in the beginning of this section may then be rephrased as follows: integration of the third verb in the cluster leads to the IPP-effect, regardless of the surface order.²⁹

²⁹ This leaves open the question as to how the third construction should be analysed; for an overview of different proposals, see, for example, De Haan (1993). I assume that the third construction does not involve cluster formation, a hypothesis which is supported by the fact that it is limited to verbs that are complemented by a *te*-infinitive.

Proposals along these lines have been made before by Hoeksema (1988) and Zwart (2007). Table 7.2, which is an extended version of table 7.1 earlier in this chapter, summarises the assumptions in Zwart (2007:83-84).

Surface order	Morphosyntax	Structure	Analysis
1-2-3	IPP	[Aux-V2-INF]	Three-verb cluster [1-2-3]
1-3-2	IPP	[Aux-INF-V2]	Three-verb cluster [1-3-2]
2-3-1	IPP	[V2-INF-Aux]	Three-verb cluster [2-3-1]
3-1-2	IPP	[INF-Aux-V2]	Three-verb cluster [3-1-2]
3-2-1	IPP	[INF-V2-Aux]	Three-verb cluster [3-2-1]
2-1-(3)	PTCP	[V2-Aux] INF	Two-verb cluster [2-1] with extraposed clausal complement
(3)-2-1	PTCP	INF [V2-Aux]	Two-verb cluster [2-1] with intraposed clausal complement

Table 7.2: Analysis of different verb orders with and without IPP according to Zwart (2007:83-84)

Along the lines of Hoeksema (1988) and Zwart (2007), I postulate the following:

- (37) The IPP-effect correlates with monoclausal structures, and is therefore absent in languages which lack the possibility of clause union in the complement of perfective *hebben*. These are typically (3)-2-1 varieties.
- (38) A true participle, as opposed to an *Infinitivus Pro Participio*, can only embed a clausal complement, not an infinitival complement.

As I argued before, the presence of a *te*-infinitive instead of a bare infinitive is also symptomatic of clausal rather than infinitival complements. If this is the case, we expect there to be a correlation between the occurrence of *te* and the IPP-effect. This correlation seems to have existed in earlier stages of Dutch. Van Helten (1892:175) and Stoett (1923) report that the IPP-effect in Middle Dutch was restricted to verbs with a bare infinitival complement. As we saw in the examples with *proberen* earlier in this section, however, there are

counterexamples to this correlation in Present-day Dutch. Some further examples are given here (for discussion, see Pardoën 1986):

- (39) ... *dat hij heeft¹ zitten² (te) slapen³*
 that he has sit.IPP to sleep
 'that he has sat sleeping'

- (39) *dat ze is¹ beginnen² (te) werken³*
 that she is begin.IPP to work
 'that he has begun to work'

As can be seen in the examples above, the particle *te* is optional in IPP-clusters with *zitten* and *beginnen*. In most cases it is optional when the governing verb is an infinitive. When verbs like *zitten* and *beginnen* are finite, on the other hand, *te* is obligatory:

- (40) *dat hij zit *(te) slapen*
 that he sits to sleep
 'that he sits sleeping'

- (41) *dat ze begint *(te) werken*
 that she begins to work
 'that she begins to work'

The fact that *te* can be omitted in IPP-contexts with verbs that otherwise require it, suggests that IPP-clusters form a tighter unit than their two-verb (simple present) counterparts. This meshes well with the observation that V2 and V3 are mostly adjacent in IPP-clusters. We can conclude from these facts that the IPP-effect occurs only in contexts where the verbs involved are connected very tightly. It may be argued, as Barbiers and Bennis (2010) do, that V2 and V3 in an IPP-cluster should be analysed as a compound participle.

Evidence for this can be seen in (southern Dutch) dialects that have 2-3-1 order and IPP (e.g. *gaan zwemmen is*), which according to them should be analysed as a two-verb cluster with a compound participle [*gaan zwemmen*]. This makes sense since a) the 2-3-1 order only occurs in IPP-clusters and not in e.g. the double modal construction and b) the dialects in which the 2-3-1 order occurs have a very pronounced preference for 2-1 in two-verb clusters with a participle.

Independent facts supporting this hypothesis are constructions in Flemish dialects like (42b), which have already been discussed in chapter two, section 2.3.3. The perfective auxiliary in (42b) is not *hebben* (as would be expected since *moeten* is normally conjugated with *hebben*, see (42a)), but *zijn* ‘be’, which is the auxiliary normally used with the more deeply embedded verb *blijven*. In other words, *moeten* has become ‘transparent’ for the perfective auxiliary, suggesting again that the auxiliary *moeten* and the main verb *blijven* behave like a compound participle.

(42a) *dat hij heeft moeten blijven* (Standard Dutch)

that he has must.IPP stay

(42b) *dat hij is moeten blijven* (Flemish dialects)

that he is must.IPP stay

both: ‘that he has had to stay’

7.2.5 IPP and the prefix *ge-*

While the correlations between IPP and verb order discussed earlier in this chapter were shown to be mostly statistical, another generalisation has been proposed in the literature that, to my knowledge, is absolute. This generalisation involves the correlation between IPP and the participial prefix in West-Germanic languages and dialects, and is given in (43).

(43) IPP occurs only in those dialects that have a participial prefix in the past participle.

This prefix may occur as *ge-*, *gi-*, *i-* or *e-* (schwa). For simplicity's sake, I will use *ge-* as a generic form to refer to all these variants. Frisian and Low German have *ge-*-less participles and lack IPP.³⁰ Dutch and German, on the other hand, have *ge-*-participles and do have the IPP-effect in the relevant context. The correlation is also upheld in Dutch dialects, as illustrated in the SAND database (Barbiers et al 2008:37).

Before we pursue this topic, an elaboration on the structure of the West-Germanic past participle may be useful. Dutch and German participles are characterised by their circumfixal morphology. This morphology consists of a prefix *ge-*, and one of two possible suffixes. The choice between these two suffixes depends to a large extent on whether the verb is weak or strong. Weak verbs have a 'regular' dental suffix which in Dutch is variously spelt as *-t* or *-d*. Some examples of regular past participles of weak verbs are given in (44).

(44a) wandelen 'walk' – *gewandeld*

(44b) tekenen 'draw' – *getekend*

(44c) kloppen 'knock' – *geklopt*

Strong verbs on the other hand mostly have the alternative suffix *-en*. Also, the participle of a strong verb is often, but not necessarily, characterised by ablaut of the verbal stem. Examples of strong verbs of which the participle lacks ablaut are given in (45a-b), examples with ablaut are (45c-d).

(45a) laten 'let' – *gelaten*

(45b) komen 'come' – *gekomen*

(45c) springen 'jump' – *gesprongen*

(45d) kijken 'look' – *gekeken*

³⁰ Note that the same is true for English and the Scandinavian languages, which are not discussed here since our perspective is limited to Continental West-Germanic.

For completeness sake, it should be mentioned that a small number of irregular weak verbs takes a dental affix but also alters the verbal stem. Two examples are given in (46) below.

(46a) *kopen* ‘buy’ – *gekocht*

(46b) *denken* ‘think’ – *gedacht*

The only Dutch participles that lack the *ge*-prefix, are verbs with a derivative prefix *be*-, *ver*- and *ont*-. These prefix typically alter the meaning of the verb into a complex event, sometimes adding an extra role to the argument structure of the original verb. Some examples are given below.

(47a) *werken* ‘work’ – *gewerkt*

/vs/ *bewerken* ‘edit, adapt, treat’ – *bewerkt*

(47b) *kopen* ‘buy’ – *gekocht*

/vs/ *verkopen* ‘sell’ – *verkocht*

(47c) *denken* ‘think’ – *gedacht*

/vs/ *verdenken* ‘suspect’ – *verdacht*

(47b) *komen* ‘come’ – *gekomen*

/vs/ *ontkomen* ‘escape’ – *ontkomen*

Now let us turn to the history of *ge*-. The prefix *ge*- (or *ga*-/ *gi*-) probably originated as a derivational prefix, which could be added to a main verb in order to derive a verb denoting a complex event, in much the same way as the Present-day Dutch prefixes *be*-, *ver*- and *ont*- (Booij et al 2006:3). An example is *ghe-drinken* which derives from the verb *drinken* ‘drink’ and means as much as ‘to drink and empty (a cup)’. *Ge*- is still productively used as a derivational prefix in Middle Dutch. Next to this derivational use, a more grammatical function can already be observed in Gothic, where the prefix *ga*- is used as an aspectual marker which renders a verb perfective (e.g. Streitberg 1900, Lloyd 1979). A similar function is observed in Old and Middle Dutch, where *ge*- may

be characterised as a 'free' prefix expressing perfective aspect (Van der Horst 2008:409-412). An example is given in (48).

- (48) *ende menech ander hoge man,/ die ic **genomen** niet en can*
 and many other high man that I ge-name not neg can
 'and many other noble men that I cannot name

(Van der Horst 2008:410).

Because of its semantic connection with perfective aspect and hence with past participles, this aspectual *ge-* came to be associated with the morphology of the participle, and eventually in many dialects it became an inherent part of the participial morphology, yielding the circumfixal morphology discussed above.

The remarkable correlation between the IPP-effect and the presence of *ge-* has led to explanations of the IPP-effect as a result of the blocking of the participial prefix (e.g. Lange 1981, 1982, Hoeksema 1988, Van den Wyngaerd, 1994, 1996; Hinterhölzl, 1999, 2009). Hoeksema (1988) proposes an account that capitalises on the former derivational properties of the prefix *ge-*. He argues that West-Germanic languages originally had a constraint on governors in the verb cluster, which prohibited complexity of those governors. Any verb including *ge-* would therefore not be allowed to have a verbal complement. Conversely, *ge-* was blocked in contexts where the participle had a verbal complement. During the Middle Dutch period, however, *ge-* lost its derivational properties in favour of its use as an inflectional affix. After this development, verbs with *ge-* according to Hoeksema are no longer analysed as complex, so that the constraint no longer applies. This explains why many exceptions to the IPP-effect start to occur after the Middle Dutch period. Those verbs that already had IPP before the reanalysis of *ge-*, however, continued to use the infinitival morphology in the IPP-context, even though the original motivation for it had disappeared. Present-day German, on the other hand, is assumed to have lost the constraint on governors in the verbal complex altogether. This loss presumably took place quite early, which according to Hoeksema explains why

German has less IPP-verbs than Dutch. Hoeksema's analysis is problematic however given the fact that the IPP-effect was still productively applied to new verbs long after the decline of *ge-* as a derivational prefix. Further in this chapter I will show that new IPP-verbs still surface in Late Middle Dutch, when *ge-* is no longer used productively as a derivational affix (e.g. Booij et al 2006; Van Dijk 2004).

Lange (1981, 1982) on the other hand assumes, as we have suggested earlier in this chapter, that the IPP-verb and its infinitival complement merge into a compound verb. This merger results in blocking of the past participle morphology on the IPP-verb, which according to Lange works as follows: the IPP-verb and its infinitival complement are too close together to be interrupted by the *ge-* prefix. This mismatch is resolved with a last resort strategy ('Ausweichkonstruktion', Lange 1982:177), by which the participial morphology as a whole is disposed of and the bare infinitive is used instead. Note that Lange's hypothesis that the IPP-verb and its infinitival complement cannot be interrupted by the *ge-* prefix, is only valid if it is assumed that the embedded verb (V3) precedes the IPP-verb (V2), as is the case in the typically German orders 3-2-1 and 1-3-2. This is the only way that a prefix *ge-* appearing on V2 would stand in between these two verbs. Many Dutch dialects with IPP, however, have 2 before 3 in IPP-constructions, e.g. 1-2-3 or 2-3-1. If these orders were in use at the time the IPP-effect originated, this would make Lange's first hypothesis invalid.

A hypothesis based on the merger of V2 and V3 into a compound verb does however offer some theoretical and empirical advantages (see also Barbiers and Bennis 2010). It is for example supported by the verb order facts discussed earlier in this chapter, i.e. that V2 and V3 are invariably adjacent in IPP-constructions. In this respect it is interesting that Lange (1982) proposes that the reanalysis of V2 and V3 as a single verb is only partial, and as a result the compound verb does not tolerate the circumfixal morphology that is typical of the past participle. Put differently, the prefix *ge-* and the affix *-t/-en* cannot be separated from each other by a complex verb. This would explain why a

resort strategy is only needed in those dialects that actually have circumfixal morphology / a *ge*-prefix. Observe in this respect that the *ge*-prefix is also blocked in the past participle compound verbs with prefixes like *ver-*, *be-* and *ont-*. This suggests that in the early stages of the IPP-construction, the merger of the causative auxiliaries with the main verb may have resulted in the causative being reinterpreted as a prefix similar to *ver-*, *be-* and *ont-*.

To sum up: the presence of the IPP-effect in a given language or dialect invariably correlates with the presence of a participial prefix *ge-*. This strongly suggests that this prefix played a role in the origin of the IPP-effect. As an explanation it has been proposed that the compound verb V2 and V3 does not tolerate the circumfixal morphology that is typical of the past participle.

7.2.6 Analyses of the IPP-verb

A recurring discussion in the literature on the IPP-effect relates to the question of how the IPP-verb itself should be analysed, i.e. whether it is a hidden participle or an infinitive. As Hinterhölzl (2009) argues, the first option is more attractive from a conceptual point of view, because it allows to maintain the assumption that perfective auxiliaries always select a participle, but is at odds with the form of the verb. The second point of view, on the other hand, is easier to motivate empirically, but raises the theoretical question why the infinitive should replace the participle.

Given that one of the participial suffixes is homophonous with the infinitival suffix, and assuming that prefixless participles were used more widely in earlier stages of Dutch and German, it has been suggested that the infinitive in IPP-constructions is actually a *ge*-less participle rather than a genuine infinitive. Lachmann (1836) is possibly the first defendant of this theory and suggests that the IPP-construction is initiated by some strong participles of preterite-present verbs, which only differ from the corresponding infinitives by the (optional) presence of the prefix *ge-*, such as *laten/gelaten* 'let' and *komen/gekomen* 'come'. Grimm (1837) and Behaghel (1932) adopted this hypothesis. More recent variants of the participle hypothesis have been

proposed by Askedal (1991), Hinterhölzl (1999, 2009), Wurmbrand (2004) and Zwart (2007). A central assumption in such proposals is that synchronically, the category ‘participle’ can surface in two possible ways: with genuine participial morphology and with ‘IPP-morphology’. In other words, the IPP-form is considered to be an ‘allomorph’ of the participle.

Problems with the assumption that the IPP-verb is actually a prefixless participle have already been signalled in the early literature on the IPP-effect. An obvious objection is given in Kern (1912), who notes that the participle theory only offers an explanation for a limited number of IPP-verbs, i.e. those which have an infinitive equal to the participle minus *ge-*. Scholars like Erdmann (1886), Van Helten (1892), Kürrelmeyer (1910) and Kern (1912) therefore assume that the IPP-form is actually what it looks like, that is, an infinitive rather than a hidden past participle. Modern adherents of this infinitive hypothesis include Evers (2003) and Schmid (2005). It is assumed in such accounts that the participle for some reason is undesirable in the IPP-context, and that speakers resort to a default form of the verb instead. This is compatible with the proposal put forward in the previous section: the compound verb does not tolerate the morphology of the participle, therefore the default form of the verb (i.e. the infinitive) occurs instead.

7.2.7 Theories on the origin of the IPP-effect

Theories on the nature of the IPP-verb as discussed in the previous section inevitably correlate with assumptions on the origin of the IPP-effect. More specifically, proponents of the participle view often adhere to the so-called ‘homophony hypothesis’, which sees the origin of the IPP-effect in the formal identity of the prefixless participle and the infinitive. Scholars who believe that the IPP-verb is an infinitive, like Erdmann (1886), have developed a theory on the origin of the IPP-effect that is based on assimilation, the so-called ‘assimilation hypothesis’. Both hypotheses will be discussed briefly in this section. The literature in this section primarily focuses on the origin of the IPP-effect in German.

In defense of the homophony hypothesis, Lachmann (1836) proposes that the IPP-effect should be traced back to some strong participles of preterite-present verbs ending in *-en*, which only differ from the corresponding infinitives by the presence of the prefix *ge-*. Following this line of reasoning, Grimm (1837) argues that the modal verbs, which he assumes had strong participles, were likely the first to appear in the IPP-construction, along with Middle German *heissen* 'order', *lassen* 'let' and *sehen* 'see'. Later it was extended to some other verbs of which the infinitive was not homophonous to a *ge-*less participle, like *helfen* 'help' (which has a participle with ablaut) and *hören* 'hear' which has a participle with a dental suffix instead of the suffix *-en*. *Tun* 'do' is not mentioned in the discussion, although IPP-constructions with *tun* occur in the examples.

The validity of the homophony hypothesis has been questioned by many scholars (e.g. Erdmann 1886, Van Helten 1892, Kürrelmeyer 1910, Kern 1912). It has been observed that this theory only explains a limited number of IPP-verbs, that is, those verbs of which the infinitive equals the participle minus *ge-*. In other words, IPP is expected to occur only with strong verbs with a participle ending in *-en* and lacking ablaut. Furthermore it is expected that these verbs should occur as *ge-*less participles relatively frequently in contexts other than the IPP-context. IPP-verbs that conform to this pattern turn out to be quite rare in Middle High German and Middle Dutch (e.g. Erdmann 1886, Kern 1912).

If we rely on Kürrelmeyer's (1910) findings from Middle German texts, only two of the earliest IPP-verbs (*tun*, *helfen*, *hören*, *heissen* and *lassen*) have a strong participle that is homophonous with the infinitive, i.e. *heissen* and *lassen*. Kürrelmeyer (1910:167) remarks, moreover, that the participle of *heissen* is barely attested without the prefix *ge-* outside the IPP-context. This leaves *lassen* as the only verb conforming to the pattern required for the homophony hypothesis, which weakens the hypothesis considerably. One solution to this would be to assume, along with Behaghel (1924), that the introduction of the prefixless participle *lassen* in the IPP-context took place *before* the extension of the pattern to other restructuring verbs. However, on the assumption that the change was set in motion by the verb *lassen*, there is no explanation as to why it

spread so easily and quickly to verbs like *tun*, *hören*, *helfen* and *müssen*, of which the *ge*-les participle is not homophonous with the infinitive. Moreover, *sehen*, which does conform to the homophony criterion, only appears in the IPP-construction from the 15th C. onwards. Also, there is no explanation why these so-called *ge*-less participles occurred primarily in the IPP-context.

Another objection against the homophony hypothesis is that it cannot account for the appearance of IPP with modal verbs, because of the particular morphological development of this class. As I explained in the previous chapter, modal verbs were originally preterite-present verbs lacking non-finite forms. Hinterhölzl (2009:9) discusses the absence of regular participles for the modal verbs. He writes that ‘the modern weak participles of modals first appear around 1500, with infinitives already being in use before’.

As an alternative to the homophony hypothesis, Erdmann (1886) proposes that the IPP-effect is the result of assimilation. The assumption is then that the close connection between the auxiliary and its infinitival complement causes the participle to ‘assimilate’ to the surrounding infinitival environment. The crucial argument in these accounts is that the IPP-effect in Middle Dutch and Middle German is only found in contexts where the IPP-verb is complemented by a bare infinitive. As Kurrelmeyer (1910) shows, the presence of the *zu*-infinitive seems to block the IPP-effect. Since many Middle German verbs alternate between a bare infinitival complement and a *zu*-infinitive, two different constructions are found. Whenever a *zu*-infinitive appears in the complement of the verb involved, the participle is used. With a bare infinitive on the other hand, we find the corresponding IPP-construction. Comparing different Middle High German Bible translations, Kurrelmeyer (1910:168) finds several examples of such alternations:

(49) *Nu hat ons got geweitert und macht ze-wachsen*

Now has us god further.PTCP and made.PTCP to-grow.INF

(Mentel Bible, printed 1466)

- (50) *Nu hat ons got geweitert und machen wachssen*
 Now has us god further.PTCP and make.IPP grow.INF
 ‘Now God has brought us further and made us grow’
 (Zainer Bible, printed 1477)

According to Kurrelmeyer the IPP-effect occurs relatively late with verbs like *sehen*, *machen* and *lernen*, because these verbs were primarily used with a *zu*-infinitive complement until the 16th C, which blocked the assimilation to the main verb.

Another argument in favour of the assimilation hypothesis is that not only double infinitive constructions, but also double participle constructions are attested, which Kurrelmeyer also explains as cases of assimilation.

- (51) *So hebbe¹ we ... getekenit³ laten² dissen bref*
 so have we sign.PTCP let.IPP/PTCP? this letter
 (charter, 1320)
- (52) *Und hebbe¹ unse Yngheseghel laten² henghet³ tu dessen breuen*
 and have our seal let.IPP/PTCP? hang.PTCP to this letter
 (1328: Mecklenburg)
 (Kurrelmeyer 1910:169)

All the examples mentioned in this respect involve the form *lassen*, which according to Kurrelmeyer was the default (*ge*-less) form for the participle of this verb. The *ge*-prefix may occur in the main verb participle, as in (51), but it may also be omitted (52). Similar examples with *heissen* ‘order’ are attested, too:

- (53) *Darumme haben¹ wir haizzen² gemachet³ disen brieff*
 therefore have we order./PTCP make.PTCP this letter
 (charter, 1305)

(54) *Hebben¹ ek myn ingesegel gehenget³ heten²*

have I my seal hang.PTCP order.PTCP

(charter, 1431)

(Kurrelmeyer 1910:170)

Finally, Kurrelmeyer (1910:170) gives one example of a double participle construction with *tun*.

(55) *Hand¹ wir unser eigen ingesigel geton² henket³*

have we our own seal do.PTCP hang.PTCP

(charter, 1387)

Interestingly, all these examples of a double participle either have no participial prefix *ge-*, e.g. (52), or only on one of the two participles, e.g. (51), (53), (54) and (55). To sum up, it seems that there were three possibilities in Middle Dutch and Middle German, listed below.

(56) Option 1: V2= participle; V3=infinitive

Option 2: V2 = (ge-less) participle, V3 = participle

Option 3: V2= IPP, V3 = infinitive.

The first option is the expected structure. The two others, Kurrelmeyer argues, are the result of assimilation. The only difference between them is the direction of the assimilation. Eventually, the pattern with two infinitives wins from the other two patterns.³¹

The question is of course, what has triggered these assimilation patterns to occur in the first place. They are typical of three-verb clusters in the IPP-

³¹ Some Present-day German dialects however, still have such double participle constructions. For discussion, see Höhle (2006) and Wurmbrand (2012).

context and do not occur in other types of three-verb clusters. This may again be a result of the fact that a compound participle is being formed. The three options discussed may then be considered as different strategies to spell out such a compound participle. Since this is a linguistic innovation, it makes sense that there is some initial variation, after which the most successful candidate (i.e., the pattern with two infinitives), is being selected. This hypothesis will be tested against our Middle Dutch data in the next section.

7.3 Corpus data from Middle Dutch

7.3.1 Attestations in the 13th C. *Corpus Gysseling* (CG)

In the few ‘Old Dutch’ texts that have survived, no instances of the IPP-effect, or the IPP-context for that matter, have been found (e.g. Coupé and van Kemenade 2009). We therefore turn our attention to the oldest collection of Middle Dutch texts, the extensive *Corpus Gysseling* (CG). According to Van Dijk (2004), who searched all the charters in the *Corpus Gysseling*, nearly all the examples of IPP in the *Corpus Gysseling* involve the causative verb *doen* ‘do’. The very first attestations occur within the so-called *corroboratio*, a formulaic conclusion of the charter. The earliest example, from Ghent, is given in (57).

- (57) *So hebbe wi dese lettren doen seghelen met den seghele uan onsen*
 So have we this letter do.IPP seal with the seal of our
gotshuse
 hospice
 ‘Thus we have had this letter sealed with the seal of our hospice’
 (CG48; Ghent, 1267)

Van Dijk found 78 cases of IPP with *doen* in a formula of this kind, and 12 cases outside the *corroboratio*. In the same period, constructions with a past participle as in (57) above are also attested several times: there are 20 attestations with the participle *ghedaen* (or orthographic variants) within the *corroboration*, and 7 outside the *corroboratio*.

I have systematically analysed all the instances of *hebben* in the charters from Bruges. Although these texts constitute more than half of CG, they contain no more than four instances of a three-verb group headed by perfective *hebben*. All of these involve *hebben* selecting the causative verb *doen*. The first three attestations contain the past participle of *doen*, as in (58). Only the last example (from 1297) is an indisputable instance of the IPP-effect.

- (58) *die muer die die van sinte claren ... hebben ghedaen maken*
 the wall that those of Saint-Claire ... have done.PTCP make
 'the wall that those of Saint-Claire ... have ordered to build'
 (CG801; 1288)

- (59) *ende wiet met onsen ghesuoren lantmetere doen meten hebben*
 and we.it with our sworn surveyor do.IPP measure have
 'And we have had it measured by our sworn surveyor'
 (CG1599; 1297)

In locations other than Bruges, however, IPP with *doen* occurs earlier and more frequently, suggesting that perhaps the Bruges texts represent a conservative dialect.

Apart from *doen*, Van Dijk found only two other verbs in the complement of perfective *hebben*, both of which, like *doen*, have a causative meaning in Middle Dutch, i.e. *laten* 'let' and *heten* 'order'. Both of these verbs are attested no more than once in this context.

The attestation of the verb *heten* 'order' (the cognate of German *heissen*) is given in the example below. It appears to be an example of the IPP-effect. Recall however that *heten* is one of the verbs that have a *ge*-less participle homophonous with the infinitive. The token with *heten* is therefore ambiguous.

- (60) *der almoesenen die hi adde **hieten** gheuen.*
 the alms that he had order.IPP/PTCP give
 'The alms that he had ordered to give'

(CG368a; Ghent, 1281)

There is only one attestation of causative *laten* in the complement of perfective *hebben*, not as an IPP, but as a participle with an allomorph of the prefix *ge-* (*i-*):

- (61) *als daer-se die here van praet vorseid ende sine vordren*
 like there-them the lord of Praet aforementioned and his forefathers
hem ende hare vordren hadden ilaten ghebruken
 them and their forefathers had let.PTCP use
 'Like the aforementioned lord of Praet and his forefathers had allowed
 them and their forefathers there to use it (them)'

(CG710; Bruges, 1287)

Apart from this example, there are two other attestations of *laten* which are interesting to our discussion. They are attested outside the IPP-context: both are passive rather than active perfect constructions in which *laten* does have an infinitival complement. This suggests that the causative verb *laten* was able to occur in the passive together with its complement, which is ungrammatical in Present-day Standard Dutch. The oldest of the two examples involves a form of *laten* that is apparently infinitival (62), the second example has a full participle (63).

- (62) *Wie van den ghulde-bruederen ter merghensprake niet en quame te tide*
 who of the guild-brethren to assembly not NEG came to time
als-t hem ware laten weten verborde .v. d. louensche.
 as-it him was let.IPP know was-fined 5 lovensche
 ‘Any guild brother who would not turn up at the assembly at the time
 that was made known to him would be fined 5 lovensche (currency)’
 (CG13; Mechelen, 1254)
- (63) *Ende dit heuet die scerre te houdene bi sinen ede dat hem es ghelaten*
 and this has the shearer to hold by his oath that him is let. PTCF
weten er hie die lakene an slaet
 know before he the cloth on beats
 ‘And this (hallmark) the shearer has to keep according to his oath, which
 he has been informed of before he nails the cloth (onto the frame)’
 (CG1340; Bruges 1294)

This suggests that along with the IPP-context, another syntactic innovation was taking place in which the passive auxiliary *zijn* ‘be’ also starts to have complex predicates in its complement. Again, the causative verb and its complement together form a tight syntactic unit. It seems that this development was never really completed, although it is present in some dialects (e.g. E. Hoekstra 1997).

The crucial fact here is that apart from *doen*, *laten* and *heten*, no other verbs are attested in the IPP-context in the 13th C. Corpus Gysseling.

7.3.2 Attestations in the 14th C. Corpus Van Reenen-Mulder (CRM)

As discussed in the previous chapters, I have closely investigated instances of finite *hebben* in a subset of the 14th C. CRM corpus. This subset consists of the following texts: 1) charters from Breda and its surroundings which represent the Brabants dialect), 2) charters from the city Utrecht and its surroundings representing the Utrechts dialect and 3) charters from the province of Drenthe, which supposedly are written by speakers of the Drents dialect. The number of

dialects included in this data set is therefore smaller than in the data from CG discussed in the previous section; CG includes texts from the whole Dutch speaking area, with the emphasis on southern Dutch dialects. This section recapitulates the findings from chapter 5 that are relevant for the present discussion of the IPP-effect. Because I investigated only clauses with finite *hebben*, the overview of IPP-verbs presented in this section does not contain those verbs that occur in the complement of the perfective verb *zijn* 'be'. IPP-verbs conjugated with *zijn* in Present-day Dutch include *komen* 'come', *blijven* 'stay', *gaan* 'go', *beginnen* 'begin' and *zijn/wezen* 'be' itself. The picture presented may therefore be incomplete. Additional corpus study is required to reveal the history of IPP-constructions with *zijn*.

The IPP-context emerges in our data set whenever *hebben* is complemented by another auxiliary. As I have shown in chapter 3, most of the 14th C. attestations of the auxiliary *hebben* involve a combination with a main verb only, yielding a two-verb cluster. The 14th C. material contains no more than two attestations of *hebben* complemented by another auxiliary. Both of these display the IPP-effect and both were found in the Brabants dialect. In other words, no three-verb constructions with *hebben* as the highest verb, with or without IPP, have been found in the 14th C. material from Utrecht or Drenthe. The first attestation from Brabants has the causative verb *doen* 'do' as the middle verb in the cluster.

- (64) *ende die voerseide wilderde ende goed also alsi gheleghen es*
 and the aforementioned wilderness and estate so as-she situated is
 ende wi se hebben¹ doen² meten³ onsen gesuoren lantmeter
 and we her have do.IPP measure our sworn land surveyor
 'And the aforementioned wilderness and estate as it is situated and (as)
 we have made our sworn land surveyor measure it...' (Brabants, 1314)

The second one dates from 1380 and involves the causative verb *laten* 'let'.

- (65) *met welker maten leveringhe ende palen dat voerseide convent*
 with which.GEN measures delivery and poles the aforementioned convent
op die een side ende ic op dander side ons hebben¹ eendrachtelic
 up the one side and I up the.other side ourselves have harmoniously
laten² ghevueghen³
 let.IPP comply
 ‘With the delivery of poles of which proportions the aforementioned
 convent on the one side and I on the other side have let ourselves comply
 harmoniously (i.e. have complied ourselves’ (Brabants, 1380)

Again, all the verbs attested in the IPP-context are causatives.

7.4 IPP-constructions in Late Middle Dutch

What follows is a detailed investigation of the IPP-context in Late Middle Dutch dialects, relying on our data set obtained from the corpus Dutch in Transition (DiT). Again, only constructions with *hebben* are included in the discussion. Data from each dialect will be discussed separately.

7.4.1 The IPP-context in the dialects

7.4.1.1 The IPP-context in Drents

	Verbs in the IPP-context in Drents									total	frequency (#/10.000w)
	doen	laten	helpen	heten	kunnen	mogen	moeten	willen	horen		
1400-1449	8	8	1	0	0	0	0	0	0	17	1,66
1450-1499	1	16	1	1	0	0	0	1	1	21	1,76
1500-1549	1	18	0	0	0	2	1	2	0	24	2,97
1550-1599	0	14	0	0	2	0	0	2	0	18	3,85
total	10	56	2	1	2	2	1	5	1	80	

Table 7.3: verbs attested in the IPP-context in Drents

Table 7.3 displays the verbs that have been found in the IPP-context in 15th and 16th C. texts from Drenthe, taking into account both main clauses and subclauses. All the instances in table 7.3 actually display the IPP-effect, except one (which is in the dark grey cell) that has the participle construction instead of the Infinitivus Pro Participio. The example has already been discussed in chapter 5 because of its deviant verb order (2-1-3):”

- (66) ... *gelyck sy dat voirtytz tVullenhaue gedaen² hebben¹ verfolghen³*
 ... like they that formerly to-Vullenhave done have continue
 ‘... as they have formerly made that continue at Vullenhave’
 (Drents, 1520)

It appears from Table 7.3 that the general frequency of IPP-contexts increases over the 15th and 16th C. Also, the number of verbs that appears in this context increases. The causative verbs *doen* and *laten* were already quite common in IPP-constructions in the first half of the 15th C. There is one other verb, benefactive *helpen*, that is attested in the IPP-construction this early. The example is given below.

- (67) *want de Besten anderen hovetheren hevet helpen inwynnen*
 because de Besten other principals has help.IPP obtain
 ‘because de Besten has helped to obtain other principals’ (Drents, 1400)

After 1450, *laten* becomes the most common IPP-verb, while *doen* is only attested sporadically. At the same time, other verbs like perceptive *horen* and modal *willen* start featuring with IPP. The other modal verbs *moeten*, *mogen* and *kunnen* are not attested in this context until 1500.

7.4.1.2 The IPP-context in Utrechts

	IPP-verbs in Utrechts				total	frequency (#/10.000 w)
	doen	laten	helpen	kunnen		
1400-1449	0	0	0	0	0	0,00
1450-1499	1	1	0	1	3	0,80
1500-1549	0	1	1	1	3	0,82
1550-1599	0	0	0	0	0	0,00
total	1	2	1	2	6	

Table 7.4: verbs attested in IPP-constructions in Utrechts

Results from the 15th and 16th C. texts from Utrecht are shown in table 7.4. The IPP-context is still very infrequent in this dialect. It is not attested before 1450. All six instances that do occur in the data set have the IPP-effect, however. Between 1450 and 1499, the IPP-context is attested three times: with *doen*, *laten* and *kunnen*. The next time section, 1500-1549, contains three instances, with *doen*, *laten* and *helpen*. An example is given in (68). Note that the second verb in the cluster, *kunnen*, appears as an IPP, whereas the main verb *crygen* gets the prefix *ge-*.

- (68) *wairbij die gemeyn borgeren ende ondersaten hoer rechte mate ende
by-which the ordinary citizens and subjects their right share and
getal nyet wel en hebben kunnen ge- crygen
number not neg have can.IPP GE-get
'by which the ordinary citizens and subjects have not been able to
receive their rightful share and number'(Utrechts, 1510)*

The last time slice contains no examples of the IPP-context at all.

7.4.1.3 The IPP-context in Brabants

As we saw in chapter 5, the Brabants corpus contains many examples of three-verb clusters headed by the verb *hebben*. A number of these have another perfective or a passive auxiliary in the complement of *hebben*, which yields a double participle construction (for discussion, see chapter 5). The majority of these three-verb clusters however have an auxiliary selecting an infinitive as the immediate complement of *hebben*, which invariably displays the IPP-effect.

- (69) ... *dat de vorg.* *Joos heeft¹ moeten² betalen³*
 that the aforementioned Joos has must.IPP pay
 ‘that the aforementioned Joos has been obliged to pay’ (Brabants, 1430)

	IPP-verbs in Brabants										frequency (#/10.000 w)
	doen	laten	helpen	kunnen	mogen	moeten	willen	horen	plegen	Total	
1400-1449	17	1	0	2	0	4	8	1	1	34	4,92
1450-1499	17	1	1	2	2	3	6	7	10	49	7,07
1500-1549	0	0	0	0	0	0	0	0	1	1	1,38
1550-1599	1	0	0	0	1	0	0	0	0	2	1,19
Total	35	2	1	4	3	7	14	8	12	86	

Table 7.5: verbs attested in IPP-constructions in Brabants

The data in table 7.5 above indicates that not only the frequency of IPP-contexts is relatively high in Brabants, but also there is much variation in terms of verbs that may undergo IPP. From as early as the first half of the 15th century, modal verbs like *kunnen* ‘can’, *moeten* ‘must’, and *willen* ‘want’ are attested with IPP, as well as causatives *doen* ‘do’ and *laten* ‘let’. The perception verb *horen* ‘hear’ is regularly attested with IPP in the 15th C. texts. It is remarkable that the frequency of IPP-constructions drops considerably after 1500. This may however be related to the construction of the corpus. Two different sources have been used for the Brabant corpus (Cerutti 1972 and Bezemer 1892),

(70) ... *dat uwe onderseten (...) huere tolle van alle denselven goeden altijt*
that your subjects their toll of all these goods always
hebben¹ plegen² te geven³ have be-used.IPP to give
‘that your subjects have always been used to pay toll for all these goods’
(Brabants, 1450)

- Interestingly, there is also an example with what seems to be a contaminated form of the infinitive and the participle *geplegen*: there is a *ge*-prefix, but the

stem does not have ablaut, which would be the case if it were a regular participle.

- (72) *dwelc de luyde van Breda niet en hebben¹ geplegen² te gheven³*
 which the people of Breda not NEG have be-used.PTCP/IPP? to give
 ‘which the people of Breda were not used to give’ (*Brabants, 1470-1479*)

As far as we know, the IPP-effect is not attested with a *te*-infinitive in Early Middle Dutch texts. As discussed earlier in this chapter, such constructions are common in Present-day Dutch. The use of IPP with some verbs that require a *te*-infinitive may therefore be considered to be an innovation in 15th C. Dutch, showing that the IPP-effect was spreading to an increasing number of contexts. As we can see in the examples above, this innovation is accompanied by initial variation between the IPP-construction and the corresponding participle construction, and even something in between the two.

7.4.2 Verb order and the IPP-effect in the data set

The facts about the verb order in three-verb clusters in our data set (including the IPP-contexts) have been presented in chapter 5: *Order variation in long verb clusters*. Recall that this data set only contains subclauses, and excludes interrupted clusters and clusters with a *te*-infinitive. The specific data about verb order in the IPP-context are summarised in table 7.6. A distinction is made between clusters in which the IPP-effect actually occurs, and clusters in which the second auxiliary is spelled out as a participle.

Aux1	Aux2	Order					
		1-2-3	1-3-2	2-1-3	2-3-1	3-1-2	3-2-1
		IPP/PTCP	IPP/PTCP	IPP/PTCP	IPP/PTCP	IPP/PTCP	IPP/PTCP
<i>hebben</i>	modal	28/0	1/0	0/0	0/0	1/0	0/0
<i>hebben</i>	causative	66/0	10/0	0/1	3/0	3/0	1/0
<i>hebben</i>	perception	10/0	0/0	0	0/0	0/0	0/0
<i>hebben</i>	benefactive	4/0	0/0	0	0/0	0/0	0/0
Total		108/0	11/0	0/1	3/0	4/0	1/0

Table 7.6: verb order in subclauses with the IPP-context in 14th, 15th and 16th C.
data from Brabant, Utrecht and Drenthe

Comparing verb order in the IPP-context in these late Middle Dutch dialects to the findings in other languages and dialects discussed in section 7.2.3, we may conclude that the verb order distribution is not very surprising: the 1-2-3 order is very common, the 3-2-1 order is extremely infrequent. The only example of this order with IPP is from 15th C. Drents:

- (73) *want/Tiesse Lambert Frederickson to gelde beden³ laten² hevet¹*
 for Tiesse Lambert Frederickson to money bid let.IPP has
 ‘for Tiesse had made Lambert Frederickson bid money’

The only example with the participle construction, is also the only example that has 2-1-3 order, suggesting, as we have assumed before, that this construction should be analysed differently from ‘regular’ IPP-clusters, i.e. as a two-verb cluster with an extraposed clausal infinitive.

- (74) *gelyck sy dat voirtytz tVullenhaue gedaen² hebben¹ verfolghen³*
 like they that formerly to-Vullenhave done have continue
 ‘as they have formerly made that continue at Vullenhave’

(Drents, 1520)

7.4.3 Summary of the data

Our data strongly suggest that the IPP-construction started with the causative verbs *doen* and *laten* and gradually spread to other types of auxiliaries, like modal verbs, perception verbs and benefactives. This seems to confirm the hypothesis that was put forward at the beginning of this chapter, i.e. that the implicational hierarchy proposed by Schmid (2005:106) reflects a historical development. Modal verbs were probably later in this development because they had a perfective paradigm, lacking nonfinite forms (see chapter 6).

(75) causatives < modals < perception verbs < benefactives < duratives < inchoatives < control verbs

The Brabants dialect again seems to be most advanced in this development, much like it was in the developments of verb order and the double modal construction sketched in the previous chapters. We also found that, while the 13th C. material gathered by other scholars revealed some variation between the construction with IPP and the construction without IPP, our data from the 14th, 15th and 16th C. almost invariably has IPP in the context [*hebben* + auxiliary + main verb]. In other words, the corresponding participle construction is nearly absent in our data set.

7.5 Discussion

This section discusses the implications of our data for our understanding of the origin of the IPP-effect. A crucial assumption in our discussion is that not only the IPP-effect, but also the IPP-*context* was innovative. To explain this assumption, some background is needed on the development of the analytic perfect.

7.5.1 The IPP-context and the development of the analytic *hebben*-perfect

The instances of the IPP-context that we investigated in this chapter, all involve a periphrastic perfect with the perfective auxiliary *hebben*. I consider the inception of the IPP-context to be a final stage in the historical development of this periphrastic perfect.³² The perfective construction with *haben* or *hebben* in the West-Germanic languages probably originated around or shortly before the emergence of vernacular writing (e.g. Kern 1912, Van der Wal 1992). It is commonly assumed that this construction derives from a possessive construction with a participial adjunct describing the state of the object (e.g. Duinhoven 1997, Van der Horst 1998, 2008). Middle Dutch instances of the *hebben*-perfect are often ambiguous between such a state reading and a perfective reading, in which the completion of the act is central. Van der Horst (2008) provides the following example:

- (76) *Onder dien spijker haddic een gat / verholenlike ghemaect*
 Under that nail had.I a hole secretly made.PTCP
 'Under that nail I had a hole (at my disposal), that was secretly made'/
 'Under that nail had I secretly made a hole' (Van der Horst 2008:402)

In the state reading, the verb *hebben* is used as a lexical verb denoting possession. The constituent *verholenlike ghemaect* is then analysed as a small clause, adding some background information about the direct object (the hole was secretly made by someone). In this analysis, the agent of *hebben* and the agent of *maken* 'make' are not necessarily identical: someone else may have made the hole. The perfective reading on the other hand is the 'newer' reading:

³² Again, it should be noted that the present study is limited to IPP-contexts with *hebben*. We therefore only discuss the development of the analytic perfect with *hebben* and not the similar analytic perfect construction with *zijn* and a participle. For a fuller understanding of the development of the IPP-effect, it would be desirable to relate the development of the *zijn*-perfect to that of the *hebben*-perfect, both in two-verb clusters and in three-verb clusters with IPP.

in this reading, *hebben* and *ghemaect* are in the same clause and share their argument structure. Observe that *hebben* in the state reading only scopes over the direct object *een gat*. The second reading, however, involves that *hebben* has semantic scope over the whole clause ‘*een gat verholenlike ghemaect*’. The development of *hebben* from a possessive verb to a perfective auxiliary again provides an illustration that the grammaticalisation of verbs involves loss of semantic content on the one hand and an increase in semantic scope on the other. Again, the semantics is the mirror image of the syntax: while the syntactic complement of the auxiliary becomes smaller, the semantic scope becomes wider.

Cross-linguistic research has shown that perfective constructions typically develop in a number of stages, i.e., different types of verbs start to feature in the construction at a different point in time. Transitive verbs that have an animate subject, like *maken* ‘make’ in the example above, appear earlier than intransitives or verbs with an inanimate subject. The perfective reading is even more easily available in instances like the ones below, in which the agent of the participle is most likely the same as the agent of *hebben*.

- (77) *Elc hadde sinen boge gespannen*
 Each had his bow tightened
- (78) *Haer spere hebben si noch verheven*
 Their spears have they still upheld
- (Examples from Duinhoven 1997:321-322)

It is assumed in the literature (e.g. Oubouzar 1974, Grønvik 1986, for Old High German) that instances like (77) and (78), with a transitive participle of which the arguments are identical to the arguments of *have*, provide the essential context for a new, perfective reading and eventually a new syntactic structure. The participle is then analysed as the main verb of the construction, and *hebben* is reanalysed as an auxiliary. Verbs that occur in such contexts are typically transitive verbs which inherently have a telic reading.

After an initial stage in which the construction *hebben* + participle only appeared in contexts that are ambiguous between a perfective and a possessive reading of *hebben*, the construction gradually spreads out to other verb types, like intransitives and verbs with an inanimate subject. Coussé (2008) shows that the *hebben* + participle construction already occurs in 13th C. Dutch sources with intransitive verbs like *spreken* ‘speak’ and *zijn* ‘be’:

- (79) *alse wi met hem ghesproken hebben*
 when we with him spoken.PTCP have
 ‘when we have spoken with him’ (Dordrecht 1284)

- (80) *ghelijc den abbet of hiere zelue hadde ghewesen present*
 like the abbot or lord himself had been.PTCP present
 ‘like the abbot or lord himself had been present’ (Brugge 1281)
 (Coussé 2008:87)

Since such contexts lack a direct object, the initial possessive reading of *hebben* is no longer available, so that *hebben* unambiguously has to be interpreted as a perfective auxiliary. From the 14th C. onwards, Coussé (*ibid.*) also finds examples of the perfective construction with an inanimate subject, which is considered to be the final stage of the development.

- (81) *also die kuer dat begrepen heeft*
 as the charter that comprised.PTCP has
 ‘as the charter comprised’
 (Coussé 2008:89)

According to Gronvik (1986) the development of the German *haben*-perfect was completed by Early Middle German. Oubouzar (1974), on the other hand, shows that the frequency of the *haben* perfect still increases drastically in the Middle German period, and that that modal verbs do not occur in the perfect

tense until the 16thC. Coussé (2008:101) also notes that the frequency of the Dutch construction *hebben* + participle still gradually increases in the 14th and 15th C, after which the frequency of two-verb clusters headed by *hebben* drops again, but the frequency of three-verb clusters headed by *hebben* increases drastically.

These insights combined with our Middle Dutch *hebben*-data suggest that the final stage of the development of the *have* perfect involves the perfect of complex verbs, i.e., an auxiliary and its main verb complement. This creates a new context, the IPP-context, which can be characterised as follows: [*hebben* + auxiliary + infinitive]. In this context, *hebben* not only has scope over one verb and its internal arguments, but over a combination of two verbs including their arguments.

7.5.2 The IPP-effect starts with causatives

Our data make it quite clear that regardless of dialect, the first verbs to appear as auxiliaries in the IPP-context were causative verbs. Recall from the previous chapter that causative verbs like *doen* and *laten* were also very common in three-verb clusters headed by *zullen*. These causatives were not semantically rich, since they merely add another argument (a causer) to the argument structure of the main verb. They also occurred invariably with a bare infinitival complement. On the other hand, causatives have narrow semantic scope; they are close to the main verb. This probably made them ideal candidates to start appearing within the scope of other, grammaticalising auxiliaries like *hebben* and *zullen*.

7.5.3 Deviating morphology

The grammaticalisation of *hebben* created a new grammatical context in which *hebben* could scope over a causative auxiliary and its infinitival complement. For some reason, this new context caused speakers to innovate the morphology on the verbs. As argued earlier in this chapter, speakers may have perceived the two embedded verbs in this new context, the auxiliary (e.g. *doen*) and the main

verb, as a close syntactic unit, which prohibited that these two verbs differed from each other in terms of morphology. An argument in favour of this is that not only the IPP-effect is attested in such contexts, but also, less frequently, a construction with a double participle (see the examples given by Kurrelmeyer 1910 earlier in this chapter). Both the IPP-construction and the double participle construction could then be regarded as the result of assimilation, used as a repair strategy for an undesirable situation in which the two verbs in the complement of *hebben* have different morphology (for a proposal along these lines, see also Schmid 2005).

This leaves unanswered the question, however, why this repair strategy should only have applied in those dialects that have circumfixal morphology on the past participle, in other words, that have a *ge*-prefix. Our data does not confirm the hypothesis that there was an intermediate stage in which this *ge*-participle was replaced by a *ge*-less participle. I proposed in section 7.3 that it is the two verbs in the complement of *hebben* act as a compound verb, that shows characteristics of compound verbs with *ver-*, *be-* and *ont-*. These compound verbs possibly dit not tolerate the circumfixal morphology with the *ge*-prefix, just as the verbs with *ver-*, *be* and *ont-*. We could even go one step further and state that the (causative) auxiliary in the complement of *hebben* is in complementary distribution with the participial morphology.

7.6 Conclusion

It was argued in this chapter that the incipience of the IPP-effect is closely related to the grammaticalisation process of *hebben*. A final stage of this process entails that *hebben* may scope over a verbal complex: an auxiliary and its infinitival complement. The first auxiliaries that appear under *hebben* in this context are causatives, which invariably have a bare infinitival complement. Modal verbs, having acquired infinitival morphology as a result of the double modal construction (see chapter 6) followed around the 14th C. The data shows that the auxiliary in IPP-clusters is invariably adjacent to the main verb. We explained both the deviant morphology of the IPP-effect and these ordering

preferences as an effect of (partial) merger between the IPP-verb and its infinitival complement. Again, the southern dialect of Brabants was advanced further in this development than the other two dialects.

Chapter 8 – A historical scenario

8.1 Introduction

This final chapter presents a historical scenario underlying the diachronic developments discussed in the previous chapters. Section 8.2 gives a summary of the findings in those chapters. Section 8.3 discusses the relationship between the incipience of the double modal construction and the IPP-construction. The relationship between these constructions and the development of verb order is discussed in section 8.4. Section 8.5, finally, gives a conclusion and an outlook for further research.

8.2 Summary of findings

8.2.1 *Verb order developments*

It has become clear in previous studies that Dutch has had two-verb clusters for many centuries. Both the 1-2 order and the 2-1 order are attested from the beginning of the vernacular writing tradition. Chapter 4 of this dissertation dealt with verb order developments in two-verb clusters with two frequent auxiliaries in 14th to 16th C. Dutch: perfective *hebben* ('have') and modal *zullen* ('shall'). After some variation in the earliest texts, both auxiliaries develop a strong preference for the 2-1 order, which was almost categorical around 1400. In the centuries that follow, the 2-1 order remains frequent. However, two-verb clusters with *zullen* show a rise of the 1-2 order at different rates in different dialects. Comparing Brabants, Drents and Utrechts, we have seen that Brabants had more 1-2 order than the other two dialects, in *hebben*-clusters as well as in *zullen*-clusters, especially in the 15th C. In other words, the southern Brabants dialect seems to be the most advanced in the diachronic development towards more 1-2 order.

Previous research shows that the rise of the 1-2 order still continues in the centuries after the 16th C. (e.g. Coussé 2008). The fact that *zullen*-clusters are almost categorically 1-2 in Present-day Standard Dutch suggests that this

development is an instance of a long term process of syntactic change towards the 1-2 order. Clusters with *hebben* and a past participle also experience a rise of the 1-2 order but only from 1550 onwards. Two-verb clusters with *hebben* still display considerable variation between both orders in Present-day Dutch. The 1-2 order in such clusters is currently seen as a register variant rather than an innovation that is still in the process of replacing the 'old' 2-1 order (e.g. De Sutter 2005).

It was demonstrated in Chapter 5 that the order preferences in clusters of three and more verbs are fundamentally different from those in clusters of two verbs. Our Late Middle Dutch corpus data shows that longer verb clusters in general have more right-branching verb order. Strictly left-branching orders (3-2-1 etc.) are clearly dispreferred, while the strictly right-branching order (1-2-3) is very frequent. Some verb orders that are a mix between left- and right-branching (e.g. 1-3-2) are also frequently attested. We saw that the morphosyntax of the second and the third verb in the cluster was a significant factor. Clusters with two infinitives (whether they are real infinitives or IPP's) most often had 1-2-3 order, clusters with a participle as the most embedded verb had a strong preference for the 3-1-2 order. We also found some differences between the dialects in chapter 5. Brabants has the highest proportion of 1-2-3 order, both in three-verb clusters with *zullen* and in three-verb clusters with *hebben*. This fits well with the observation that this dialect has the strongest preference for 1-2 order in two-verb clusters, both with *zullen* and *hebben*. Upon closer examination, however, it appears that Brabants simply has more double infinitive clusters than the other two dialects, which explains the high share of 1-2-3 clusters.

A shared property of nearly all the long verb clusters investigated is a clear preference for the finite verb to precede the second verb in the cluster (1 before 2). This contrasts with the order in two-verb clusters, in which 2-1 was (still) more frequent than the 1-2 order and hence the finite verb follows the embedded verb. It was shown that similar differences between two-verb

clusters and longer verb clusters can be witnessed in West-Germanic languages in general, suggesting that there is a language-internal explanation.

In order to account for these facts, I have suggested in chapter 5 that verb order is affected by the interplay between two principles: Reflect Underlying Hierarchy (RUH) and Avoid Syntagm Ambiguity (ASA). The RUH principle stipulates that the surface structure of verb clusters should reflect their internal hierarchy, whether it be from left to right or from right to left. In other words, according to this principle mixed orders like 1-3-2 are less preferable than 'straight' orders like 1-2, 2-1, 1-2-3, 3-2-1 etc. This principle has more weight as verb clusters become longer (e.g. four or more verbs). We have attributed this to the fact that verb order in such clusters becomes a cue for the hearer to determine the internal hierarchy of the cluster. The ASA principle requires elements of the verb cluster that help the hearer determine the nature of the syntagm, such as the finite verb, to appear early in the cluster. These two principles together may account for many differences in verb order preferences between different types of two-, three- and four-verb clusters in the corpus.

8.2.2 Innovative constructions

Chapters 6 and 7 discussed two innovative constructions that gained frequency in the period under investigation: the double modal construction and the IPP-construction. It was shown in chapter 7 that the double modal construction was an innovation in Early Middle Dutch. Modal infinitives were nonexistent (or at least very infrequent) in earlier stages of Dutch and other Early Germanic languages. This is probably related to the fact that the proto-Germanic ancestors of the modals belonged to a separate class of preterite present verbs, which had a defective paradigm. Dutch modal verbs like *mogen* 'may', *moeten* 'may', *kunnen* 'can' and *willen* 'want' started to appear as infinitives in a specific context from the 13th C. onwards: [*zullen* + modal infinitive + V]. This morphosyntactic innovation was related to the semantic shift in the modal verb system, and, more specifically, to the proceeding grammaticalisation of Middle Dutch *zullen*, which went along with increased scope of *zullen*. This created new contexts in which dynamic and deontic modal auxiliaries could occur. The

innovative [*zullen* + modal infinitive + V] construction allows a combination of different modal verbs and thus different modal meanings within one clause, for example epistemic modality with deontic or dynamic modality. Such combinations were previously expressed by other linguistic means, e.g. subjunctive inflection on modal verbs.

Quite strikingly, the new context in which modals may appear triggers a morphosyntactic innovation that involves the extension of the paradigm of modal verbs with infinitives. In other words, the grammaticalisation of Dutch modal auxiliaries involves extension rather than reduction of the paradigm. Syntactic extension to new grammatical contexts was accompanied by extension of the morphological paradigm. This was probably achieved by analogy with regular verbs or other auxiliaries that did have nonfinite forms, especially those verbs that could be used in similar contexts under *zullen*, like causative *doen* 'do'.

The innovative [*zullen* + modal infinitive + V] construction most likely had its origin in southern Dutch dialects. We saw in our data set that the Brabants dialect was (again) the most advanced in this development: we found the construction already in the 14th C. data from this dialect. The Utrechts dialect had this construction from the 15th C. onwards, in Drents it started to appear in the 16th C.

The second innovative three-verb construction is the IPP-construction. It was argued in Chapter 7 that the actuation of this construction is related to the grammaticalisation process of perfective *hebben* 'have'. A final stage of this process entails that *hebben* may have scope over a verbal complex: an auxiliary and its infinitival complement. The first instances of the IPP-effect are from the 13th C. The first auxiliaries that appear under *hebben* in this context are invariably causatives, which always have a bare infinitival complement. The first IPP-constructions with modal verbs follow around the 14th C. Investigating the verb order in IPP-clusters, we found that the auxiliary undergoing IPP is invariably adjacent to the main verb. Both the deviant morphology of the IPP-effect and these ordering preferences were explained as an effect of (partial) merger between the IPP-verb and its infinitival complement. The occurrence of IPP (instead of a corresponding construction with a participle) is associated with a larger degree of auxiliation of the second auxiliary in

the cluster. This explains why different auxiliaries start to appear in the IPP-constructions at different points in time, and why for some verbs IPP is (still) optional. Again, the southern dialect of Brabants was advanced further in this development than the other two dialects investigated.

Both innovative constructions discussed in this dissertation have contributed to a rise in frequency of longer verb clusters. They have in common that they result from the increasing grammaticalisation of the auxiliaries *hebben* and *zullen*, which involved that they could scope over a larger-size predicate, i.e. a main verb combined with an auxiliary.

8.3 Relationship between the rise of the double modal construction and the IPP-effect

The question now is what the relationship is between the different diachronic developments discussed in this dissertation. To this end, the data from different dialects will be compared once again. First, let us consider the relationship between the double modal construction and the IPP-effect. These two innovations occurred first in the Brabants data, which may suggest that they are related. Table 8.1. summarises the data with regard to the rise of the double modal construction, the IPP-construction with causative verbs and the IPP-construction with modal verbs.

Dialect	Century	Double modal construction	IPP with causatives	IPP with modals
Brabants	14thC	✓	✓	-
	15thC	✓	✓	✓
	16thC	✓	✓	✓
Drents	14thC	-	-	-
	15thC	-	✓	-
	16thC	✓	✓	✓
Utrechts	14thC	-	-	-
	15thC	✓	±	±
	16thC	✓	±	±

Table 8.1: attestations of the double modal construction, the IPP-construction with causatives and the IPP-construction with modals in different parts of the corpus; - = not attested; ± = only 1 or 2 attestations; ✓ = attested more than twice.

Table 8.1. suggests that the rise of the IPP-effect with causatives and the rise of the double modal construction, even if they are both attested first in the Brabants dialect, are in fact two independent changes. There is robust evidence for the IPP-effect in 15th C. Drents, while at the same time the double modal construction is not attested yet. The order of both innovations seems to be the reverse in Utrechts. In this dialect, the double modal construction becomes firmly rooted in the 15th C., but IPP is still very rare.

These two independent innovations apparently antedate the introduction of the IPP-effect with modal verbs, although the IPP-effect with modal verbs follows quite quickly when the other two innovations have taken place. This suggests that both were needed in order for this third innovation to

take place. It is likely that the rise of the [*zullen* + modal infinitive + V] construction paved the way for the use of modal infinitives in other contexts, like the IPP-construction. Conversely, I assume that the innovative IPP-construction with causatives provided the condition for other auxiliaries to start appearing under *hebben*, not only modal verbs but also, for example, perception verbs and benefactive verbs. The innovations gradually extended from one context to another, giving rise to an increasing number of possible combinations of auxiliaries.

8.4. Correlation between innovative constructions and 1-2 verb order

It has become clear that the Brabants dialect was the first to acquire the innovative constructions discussed in the previous section. I also showed that the Brabants dialect had more 1-2 verb order in two-verb clusters. This again raises the question whether these two developments are related. Table 8.2. gives a more detailed overview of the frequency of the innovative constructions and the relative frequency of the 1-2 order in clusters with *zullen*. The 14th C. data is omitted from this table, since the double modal construction and the IPP-construction are both very infrequent in the 14th C. data.

	Doubt modal constructions (#/10.000 words)			IPP-constructions (#/10.000 words)			1-2 order in 2-verb clusters with <i>zullen</i>		
	Utrechts	Drents	Brabants	Utrechts	Drents	Brabants	Utrechts	Drents	Brabants
1400-1449	5,11	0	10,57	0,00	1,66	4,92	3,6%	10,2%	28,9%
1450-1499	20,55	0	23,96	0,80	1,76	7,07	4,5%	18,2%	46,8%
1500-1549	51,92	2,97	72,99	0,82	2,97	1,38	2,2%	56,9%	14,0%
1550-1599	77,41	4,28	92,82	0,00	3,85	1,19	17,6%	72,3%	31,1%
Average	31,32	1,26	27,59	0,58	2,29	5,30	3,6%	24,6%	36,1%

Table 8.2: frequency of double modal constructions and IPP-constructions, share of 1-2 order in 2-verb clusters with *zullen*, divided by dialect and time slice.

Table 8.2 shows that a high frequency of the double modal construction alone, as in the 15th C. Utrechts data, does not necessarily correlate with a high frequency of 1-2 verb order. If both the IPP-construction and the double modal construction are attested with a relatively high frequency, as in 15th C. Brabants and 16th C. Drents, this does correlate with a higher share of 1-2 order. Several explanations may be given for this correlation. First, the occurrence of both these innovations together simply results in a higher frequency of longer verb clusters, more specifically double infinitive clusters. These clusters, as we saw in chapter 5, mostly have 1-2-3 order and almost categorically have the finite verb (1) before the second verb (2) in the cluster. As these two independent constructions have gained frequency, they even start to be combined with one another in one clause, as is the case in some of our corpus examples from Brabants. This yields a cluster of four verbs in which the verb order is categorically 1-2-3-4.

- (1) *Soo souden sijne erfgenaemen na sijn doot deselve goede als*
 thus should his heirs after his death the-same goods as
erfgenamen mogen doen ontsetten, gelijk dat die doode soude¹ hebben²
 heirs may do.INF confiscate like that the dead should have.INF
mogen³ doen⁴
 may.INF do.INF
 ‘Thus his heirs would be allowed to have the same amount of goods
 confiscated, as the deceased would have been allowed to do’
 (Brabants, 1470)

The preference for the right-branching order thus probably became even stronger once the two innovations gained frequency. As we saw in chapter 5, the ASA principle requires speakers to put the highest auxiliary first in double infinitive clusters, since this is the only element that may disambiguate between an IPP-construction and a double modal construction, as illustrated in (2a) and (2b).

- (2a) *... dat hij een lied heeft¹ mogen² zingen³*
 that he a song has may.IPP sing.INF
 ‘that he has been allowed to sing a song’
- (2b) *... dat hij een lied zal¹ mogen² zingen³*
 that he a song shall may.INF sing.INF
 ‘that he will be allowed to sing a song’

If both the IPP-construction and the double modal construction are available in a dialect, the ASA principle is therefore predicted to have more weight, leading to verb orders in which the finite verb is ‘preposed’.

The increased frequency of double infinitive clusters with 1-2-3(-...) order leads to an increase in contexts where the auxiliary precedes its verbal complement. This increase in contexts with a preposed auxiliary may have

influenced language users (or language learners) to use the 1-2 order in two-verb clusters as well. We have seen that the 1-2 order has become the canonical order in Present-day Dutch two-verb clusters with *zullen*. It would probably be too bold to state that this is entirely due to the rise of longer verb clusters, but it may certainly have played a role. On the other hand, it is also possible that the correlation between both developments (the rise of long clusters and the rise of the 1-2 order) is not direct. Both developments may for example result from another underlying factor, for example the increasing auxiliatation of *zullen*.

From a diachronic point of view, the changes in Dutch verb order may be regarded as an example of Hawkins' (2004) Performance-Grammar Correspondence Hypothesis, which stipulates that grammatical rules often derive from frozen or fixed performance preferences. The preference for the 1-2 order, which in some contexts has a performance advantage (as stipulated in the ASA principle), over time is becoming fixed in the grammar, at least in Standard Dutch clusters with *zullen*. Evidence for this scenario can be found in the observation that dialects with longer clusters are generally more advanced in the development towards 1-2 order.

An obvious objection might be the fact that this scenario is only valid for Standard Dutch, not for Standard German. After all, it was argued in chapter 5 that the correlation between cluster length and verb order is cross-linguistically robust. The innovative IPP-construction and double modal construction are also present in Present-day German syntax. We would therefore expect that if a correlation with word order applies, it would also apply in German. Yet, the data in some studies on German (e.g. Ebert 1981, Bies 1996, Sapp 2006, 2011) indicate that in fact the opposite trend has taken place in Early New High German, i.e. a gradual decrease of 1-2 orders in favor of 2-1. In Present-day Standard German, 2-1 is practically the only option in two-verb clusters. It is moreover documented by various scholars (e.g. Härd 1981, Takada 1994, Sapp 2006, 2011) that the 3-2-1 gradually replaces other verb orders in different types of three-verb clusters from Early New High German

onwards. An exception, however, are the IPP-syntagms, which continue to prefer 1-3-2 order up to the present day.

A possible explanation for the difference between Dutch and German is that clusters of three and more verbs were simply less frequent in Early Modern German than in Early Modern Dutch, and therefore did not provide the robust evidence for language users that they did in Dutch. Thus, in the course of the Dutch standardisation period, the influence of verb order in longer clusters would have been more pervasive than in the corresponding German period. A superficial comparison of the data set collected by Sapp (2006) for Early New High German with the data gathered for this study indicates that this hypothesis may be on the right track. Searching for verb clusters in his Early New High German corpus (1350-1650), Sapp applies search criteria that are very comparable to the ones used for this study (as described in chapter 3). Yet, he finds only 165 three-verb clusters as opposed to 2727 clusters with two-verbs, i.e. the ratio of three- to two-verb clusters is 1 to 16,5. Our data set contains 998 three-verb clusters and 7677 two-verb clusters, a ratio of 1 to 7,7. In his whole corpus, Sapp only finds 4 examples of a verb cluster containing four verbs, whereas we have found 31 such clusters. In addition, the frequency of longer clusters in Dutch increases significantly in the course of the 15th and 16th centuries, as was illustrated in figure 1. Three- and four- verb clusters become even more frequent in 17th C. Dutch (e.g. Coupé and Van Kemenade 2009).

If the frequency of long verb clusters (especially double infinitive clusters) is indeed higher in Dutch than in German, the question is how this should be explained. We saw in chapter 7 that Dutch for example has a larger set of IPP-verbs, suggesting that some Dutch verbs are further in the process of auxiliatation than their German counterparts. Another factor might be that the development from synthetic to analytic constructions was slower in German than in Dutch. The subjunctive for example has survived longer in German than in Dutch, to some extent obviating the need for the use of modal verbs and, as a result, also for combinations of modal auxiliaries. A more detailed comparison

between multiple verb constructions in German and Dutch corpora might confirm these hypotheses, but is outside the scope of this study. More comparative research between Early Modern German and Early Modern Dutch is certainly needed in order to account for the similarities as well as the diverging developments in both languages.

8.5 Conclusion and outlook for further research

This dissertation has provided a diachronic account of Dutch verb clusters, focusing specifically on the diachronic development of the auxiliaries *hebben* and *zullen*. The development of these auxiliaries is characterised by an increase in semantic scope, while from a syntactic point of view they form a tight syntactic unit with their complements. The scope increase leads to an increasing number of verbs and verb combinations that may appear in the complement of these auxiliaries. This way, the Dutch verb cluster system in stepwise fashion became more analytic and more extended.

This in turn yields longer verb clusters. While in Early Middle Dutch clusters of two verbs were the norm, Late Middle Dutch has many three- and even four-verb clusters. This has implications for the internal order of verb clusters: as they become longer, their internal order is more likely to reflect the underlying syntactic hierarchy (RUH), and the finite verb, which in many cases betrays the nature of the verb cluster, is often preposed, which we have explained as avoidance of syntagm ambiguity (ASA). While many language-internal and language-external factors have already been proposed in order to account for verb order in two-verb clusters, we may have uncovered in this dissertation another language-internal factor that influences the choice of verb order: the frequency of long verb clusters, which inherently have right-branching order, may have an influence on the choice between the 1-2 order and the 2-1 order in two-verb clusters.

Many questions obviously remain unanswered in this study. Since we focussed on *hebben* and *zullen* only, it is worth investigating whether other auxiliaries have undergone a similar development. An obvious candidate for

further research is the auxiliary *zijn* 'be', which has a perfective use and just like *hebben* features in IPP-constructions in Present-day Dutch. This study is limited to three Dutch dialects in the period between 1300 and 1600. The hypothesis that the increasing frequency of long verb clusters has an impact on the use of the 1-2 order needs to be tested against data from other dialects and other periods. The question is how exactly the innovative constructions develop further in Dutch dialects, and how this correlates with verb order. It would be interesting to find out, for example, what the frequency of long verb clusters is in different Present-day Dutch dialects and how this relates to the preferred verb order in two-verb clusters. The comparative perspective between Dutch and German, as mentioned in the previous section, also offers an interesting perspective for further research.

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Samenvatting (Dutch summary)

Dit proefschrift behandelt de historische ontwikkeling van het syntactische verschijnsel ‘werkwoordcluster’ in het Nederlands. Dit verschijnsel houdt in dat een aantal werkwoorden samen ‘clusteren’ aan het einde van een (bij)zin. De werkwoorden in een dergelijk cluster worden slechts bij uitzondering ‘onderbroken’ door niet-werkwoordelijke elementen. Hieruit kunnen we afleiden dat ze een sterke syntactische eenheid vormen, al zijn ze nog steeds herkenbaar als afzonderlijke woorden. Bijzonder is dat de volgorde van de werkwoorden in dergelijke clusters variabel is, zoals blijkt uit onderstaande voorbeelden.

- (a) *dat Louise een appel wil eten / eten wil*
- (b) *dat Louise een appel heeft gegeten / gegeten heeft*

In tegenstelling tot andere voorbeelden waarin de volgorde van talige elementen varieert, is er bij werkwoordclusters geen duidelijk betekenisverschil tussen beide volgordevarianten. We lijken dus te maken te hebben met vrije syntactische variatie, wat vanuit cross-linguistisch perspectief zeldzaam is.

In deze studie toon ik aan dat in het Nederlands geleidelijk aan steeds vaker langere werkwoordclusters voorkomen. Het vroege Middelnederlands kende voornamelijk ‘korte’ werkwoordclusters, waarin één hulpwerkwoord werd gecombineerd met een hoofdwerkwoord, zoals in de hierboven weergegeven voorbeelden. In de vroegmoderne tijd zijn clusters van drie of vier werkwoorden geen uitzondering meer.

Ook in oudere taalfasen was de volgorde in deze clusters van twee werkwoorden variabel: zowel de 1-2 volgorde (hulpwerkwoord voorop) als de 2-1 volgorde (hoofdwerkwoord voorop) kwamen voor. Eerder onderzoek heeft een diachrone ontwikkeling laten zien waarbij de 1-2 volgorde vanaf 1400

geleidelijk aan de andere volgorde vervangt. Deze ontwikkeling is zo goed als voltooid in clusters met een hulpwerkwoord en een infinitief, waarin de variant *wil eten* (1-2) tegenwoordig veel vaker voorkomt dan het alternatief *eten wil* (2-1). Dit zou erop kunnen wijzen dat de ogenschijnlijk vrije variatie in het andere type, namelijk *heeft gegeten* / *gegeten heeft* een tussenstadium weerspiegelt in een ontwikkeling waarbij ook in dergelijke clusters met een hulpwerkwoord en een voltooid deelwoord de 1-2 variant de 2-1 variant geleidelijk vervangt,

Mijn betoog in dit proefschrift is dat beide ontwikkelingen, namelijk de ontwikkeling richting de 1-2 volgorde en het feit dat werkwoordclusters steeds langer worden, met elkaar verband houden. Daarom heb ik niet alleen de veranderende werkwoordvolgordes bestudeerd, maar ook twee syntactische innovaties die vanaf de 14^{de} eeuw hun intrede deden in het Nederlands en die ervoor hebben gezorgd dat werkwoordclusters langer konden worden, namelijk de constructie met twee modale werkwoorden en het 'IPP-effect'.

Het eerste hoofdstuk van deze dissertatie geeft in grote lijnen de afbakening van het onderzoek weer: ik bestudeer zowel korte als lange werkwoordclusters, en richt me op 3 'Nederlandse' dialecten tussen 1300 en 1600: Brabants, Drents en Utrechts. Door de focus op dialecten die nog niet eerder in dit opzicht bestudeerd zijn (namelijk Utrechts en Drents) en op langere clusters onderscheidt dit onderzoek zich van eerdere studies en levert het fundamenteel nieuwe inzichten op.

In het tweede hoofdstuk, *The Dutch verb cluster: an exploration*, wordt het fundament voor het onderzoek gelegd door een aantal belangrijke concepten en theorieën rondom werkwoordclusters te bespreken, waarbij uitgebreid verwezen wordt naar de bestaande literatuur rond dit thema. Het concept 'werkwoordcluster' hangt nauw samen met het concept 'hulpwerkwoord'. In deze studie hanteer ik een ruime definitie van dat laatste concept; vanuit een semantisch perspectief zijn hulpwerkwoorden werkwoorden die zelf geen volledige lexicale betekenis hebben, maar die een (grammaticale) betekenis toevoegen aan een hoofdwerkwoord of een groep van werkwoorden. Hulpwerkwoorden vormen een syntactische eenheid met

hun verbale complement en delen daarmee de argumentstructuur. Uit de literatuur blijkt dat deze hulpwerkwoorden zich doorgaans historisch ontwikkelen vanuit zelfstandige, lexicale werkwoorden, waarbij ze geleidelijk betekenis verliezen en nauwer aansluiten bij hun werkwoordelijke complement. Dit diachrone proces staat te boek als grammaticalisatie, of meer specifiek, auxiliarisatie. In deze studie wordt duidelijk dat het grammaticalisatieproces van hulpwerkwoorden vaak gepaard gaat met een toename van hun semantische bereik ('scope'). Verschillende soorten hulpwerkwoorden worden onderscheiden, afhankelijk van het soort betekenis dat ze toevoegen: modaal, causatief, perceptief, aspectueel, perfectief en passief zijn de meest voorkomende categorieën. Naar een combinatie van een of meer typen hulpwerkwoorden met een hoofdwerkwoord verwijst ik, in navolging van eerdere studies, met de term *syntagma*.

Als er sprake is van meerdere hulpwerkwoorden binnen een syntagma, staan deze hulpwerkwoorden in een hiërarchische verhouding tot elkaar. De oppervlaktevolgorde van de werkwoorden kan deze hiërarchie van links naar rechts weergeven (1-2-3), van rechts naar links (3-2-1), of een mix daartussen (bijvoorbeeld 1-3-2 of 3-1-2). Hieronder worden enkele voorbeelden gegeven.

- | | | | | |
|-----|----------------------------|---|--|---------|
| (c) | <i>dat Simon zijn huis</i> | <i>moet¹</i> | <i>hebben² verkocht³</i> | [1-2-3] |
| (d) | <i>dat Simon zijn huis</i> | <i>moet¹</i> | <i>verkocht³ hebben²</i> | [1-3-2] |
| (e) | <i>dat Simon zijn huis</i> | <i>verkocht³ moet¹</i> | <i>hebben²</i> | [3-1-2] |
| (f) | <i>dat Simon zijn huis</i> | <i>verkocht³ hebben² moet¹</i> | | [3-2-1] |

In de literatuur wordt een aantal factoren besproken die invloed hebben op de keuze tussen de verschillende volgordevarianten. De sterkste factor is het dialect of regiolect van de spreker: zo is in het noorden van het Nederlandse taalgebied de volgorde met de hiërarchie van rechts naar links (2-1, 3-2-1) gebruikelijk, kent het midden van het taalgebied voornamelijk de omgekeerde volgorde (1-2 en 1-2-3) en is de keuze in het zuiden sterk afhankelijk van het soort hulpwerkwoord dat gebruikt wordt.

Ik bespreek in hoofdstuk 2 verschillende mogelijke analyses van werkwoordclusters. In generatieve studies wordt vaak verondersteld dat er één basisvolgorde is waaruit de andere volgordes afgeleid worden door derivatie. In deze studie ga ik ervan uit dat werkwoordclusters het resultaat zijn van de vorming van een werkwoordelijk complex in het lexicon, waarbij de elementen van dit complex in een variabele volgorde kunnen verschijnen. Vanuit een historisch oogpunt is het fenomeen werkwoordclusters te verklaren door het feit dat hulpwerkwoorden aan de ene kant een steeds kaler verbaal complement krijgen, terwijl aan de andere kant hun semantische bereik toeneemt. Hedendaagse Nederlandse hulpwerkwoorden verschillen in de mate waarin ze deze ontwikkeling hebben doorgemaakt. In het verstgevoorderde stadium gedragen het hulpwerkwoord en zijn complement zich syntactisch als een samengesteld werkwoord.

In hoofdstuk 3 wordt de onderzoeksmethode besproken. Ik geef een beschrijving van de tekstcorpora die zijn gebruikt om de drie (laat)middelnederlandse dialecten, Drents, Brabants en Utrechts, te onderzoeken. Door alle finiete vormen (inclusief context) van twee frequente hulpwerkwoorden, namelijk *hebben* en *zullen*, uit deze corpora te selecteren, heb ik een set data samengesteld van 9253 zinnen, waarvan ik de werkwoordstructuur en – volgorde nader heb bestudeerd.

Hoofdstuk 4, *Order variation in two-verb clusters*, behandelt de volgordevariatie in clusters van twee werkwoorden met *hebben* en *zullen* in de genoemde dialecten in de periode tussen 1300 en 1600. Deze studie bevestigt het beeld uit eerdere studies: clusters met twee werkwoorden vertonen variatie tussen beide volgordes (1-2 en 2-1) in de 14^{de} eeuw, waarna een bijna absolute voorkeur voor de volgorde 2-1 ontstaat rond 1400. In de daarop volgende eeuwen neemt het aandeel 1-2 volgorde weer geleidelijk toe, hoewel het tempo waarop dat gebeurt verschilt tussen de hulpwerkwoorden *hebben* en *zullen*, en tussen de verschillende dialecten. Uit mijn data blijkt dat het Brabantse dialect voorloopt op de andere twee dialecten. Het uiteindelijke resultaat van dit taalveranderingsproces is zichtbaar in het huidige

Standaardnederlands, waarin *zullen* bijna exclusief de 1-2 volgorde vertoont en *hebben* tussen beide volgordes varieert.

In hoofdstuk 5, *Order variation in long verb clusters*, laat ik zien dat de volgordevoorkeuren in langere clusters, voor zover die in de onderzochte teksten voorkomen, fundamenteel verschillen van de voorkeuren in clusters van twee werkwoorden. In deze langere clusters staat het finiete werkwoord veel vaker voorop. Een uitzondering zijn lange clusters waarin het diepst ingebedde werkwoord een participium is; in dat geval wordt het participium ook regelmatig vooropgesteld. Deze voorkeuren blijken niet alleen typerend voor lange werkwoordclusters in het Laatmiddelnederlands, maar komen ook voor in andere West-Germaanse dialecten, zowel synchron als diachroon. Dit verklaar ik aan de hand van twee principes. Het eerste, *Reflect Underlying Hierarchy*, stipuleert dat de volgorde van werkwoordclusters de onderliggende hiërarchie getrouw dient weer te geven. Dit principe wordt sterker naarmate werkwoordclusters langer worden. Hoe langer de cluster, hoe belangrijker de onderlinge volgorde van de werkwoorden wordt als aanwijzing voor de hoorder om de syntactische hiërarchie te kunnen bepalen. Het tweede principe, *Avoid Syntagm Ambiguity*, houdt in dat elementen die de hoorder helpen om het type syntagma te bepalen, zoals bijvoorbeeld het finiete werkwoord, vooraan in de cluster dienen te verschijnen. Beide principes samen zorgen ervoor dat lange werkwoordclusters vaak de 1-2-3-4-... volgorde vertonen.

Hoofdstuk 6, *The development of double modal constructions in Dutch*, behandelt een tot nog toe redelijk onopgemerkt gebleven Middelnederlandse innovatie: de constructie met twee modale hulpwerkwoorden. Ik laat zien dat deze constructie in de Oudgermaanse talen niet voorkomt, en dat modale infinitieven zelfs in het geheel niet geattesteerd zijn. In onze Middelnederlandse corpusteksten vinden we de constructie met twee modalen oorspronkelijk slechts zeer sporadisch. In de eerste attestaties is *zullen* onveranderlijk het hoogste werkwoord in de hiërarchie, gevolgd door *mogen* of *moeten* en een hoofdwkwoord. De innovatieve constructie is dan ook als volgt te typeren:

[*zullen* + modale infinitief + hoofdwerkwoord]. In de loop der eeuwen neemt de frequentie van deze constructie geleidelijk toe, ook in de andere twee dialecten, en ontstaan er ook varianten met andere modale hulpwerkwoorden. Ook in deze ontwikkeling lijkt het Brabantse dialect voorop te lopen.

Dat de infinitievorm van modale werkwoorden voorheen niet voorkwam, heeft waarschijnlijk te maken met het feit dat deze werkwoorden in het Oudgermaans tot een bijzondere morfologische categorie behoorden, de zogenaamde *pretorito-presentia*. Deze werkwoorden hadden een defectief paradigma zonder infinitieve vormen. Het toegenomen semantische bereik van *zullen* (dat gepaard gaat met een betekenisverschuiving naar *futuris* en *irrealis*) draagt ertoe bij dat *zullen* na verloop van tijd kan prediceren over een ander modaal werkwoord. De resulterende constructie [*zullen* + modale infinitief + hoofdwerkwoord] drukt complexe modale betekenissen uit, die voorheen op een andere wijze uitgedrukt dienden te worden, bijvoorbeeld door synthetische conjunctief-vormen. Dat *mogen* en *moeten* uiteindelijk in het bereik van dit gegrammaticaliseerde *zullen* kunnen voorkomen, vereist het uitbreiden van hun morfologische paradigma met infinitieven, wat vanuit het oogpunt van grammaticalisatie een interessante ontwikkeling is: doorgaans gaat grammaticalisatie eerder gepaard met reductie dan met uitbreiding van paradigmata.

In hoofdstuk 7 wordt een andere Middelnederlandse innovatie besproken: het *Infinitivus Pro Participio*-effect, kortweg IPP-effect. In zinnen zoals (g) hieronder heeft het perfectieve hulpwerkwoord (in dit geval *hebben*) een ander hulpwerkwoord (in dit geval *laten*) en een hoofdwerkwoord in zijn complement. Waar *hebben* in andere omstandigheden een participium selecteert, verschijnt in dit geval de infinitief van *laten*, vandaar de term *Infinitivus Pro Participio*. Deze constructie is wijd verspreid in West-Germaanse talen en dialecten.

(g) *dat hij het huis heeft¹ **laten**² verbouwen³*

Ik laat in hoofdstuk 7 zien dat het ontstaan van het IPP-effect nauw samenhangt met de grammaticalisering van *hebben* als perfectief hulpwerkwoord. Ook toon ik aan dat niet alleen het IPP-effect, maar ook de IPP-context innovatief is. Het grammaticaliseringsproces van *hebben* verloopt in verschillende stadia, waarvan het laatste stadium inhoudt dat *hebben* kan prediceren over een verbaal complex, dat wil zeggen: een hulpwerkwoord en zijn werkwoordelijk complement. Hierdoor ontstaat de innovatieve IPP-context. De eerste hulpwerkwoorden die in het complement van *hebben* worden gesignaleerd zijn de causatieve hulpwerkwoorden *doen* en *laten*. Deze hulpwerkwoorden komen al vanaf de vroegste bronnen systematisch voor met een kaal infinitiefcomplement. Het complex van causatief hulpwerkwoord en hoofdwkwoord kon daardoor worden opgevat als een complex werkwoord, dat perfectief aspect kon krijgen door toevoeging van *hebben*. De hypothese dat we te maken hebben met een heranalyse van beide werkwoorden als een complex werkwoord in het complement van *hebben*, wordt versterkt door het feit dat, hoewel verschillende werkwoordvolgordes voorkomen, het IPP-werkwoord altijd adjacent is aan het hoofdwkwoord. Overigens komen kort hierna ook modale hulpwerkwoorden in de IPP-context voor. Opnieuw loopt het Brabants voorop op de andere dialecten. Hiermee is nog niet de vraag beantwoord waarom de morfologie in deze constructie afwijkt van het gebruikelijke participiummorfologie. Mogelijk maakt de nauwe samenhang tussen het IPP-werkwoord en hoofdwkwoord, die immers samen als een complex werkwoord worden geïnterpreteerd, het voor sprekers onwenselijk dat zij van elkaar verschillen qua morfologie.

In hoofdstuk 8 wordt een historisch scenario geschetst waarin de verschillende onderzochte ontwikkelingen met elkaar in verband worden gebracht. De opkomst van het IPP-effect met causatieve hulpwerkwoorden en de opkomst van de constructie met twee modalen lijken, hoewel ze allebei het eerst voorkomen in het Brabantse dialect, twee onafhankelijke ontwikkelingen: in het 15^{de} eeuwse Drents komt het IPP-effect al geregeld voor, terwijl de dubbele modalen hun intrede nog niet hebben gedaan. In het Utrechts lijkt de

volgorde van de innovaties andersom te zijn gegaan. De data wijzen erop dat beide onafhankelijke ontwikkelingen voorafgegaan zijn aan de introductie van het IPP-effect met modalen, hoewel deze laatste ontwikkeling vlug volgt zodra de eerste twee innovaties daartoe de weg hebben vrijgemaakt. Bovendien komen na verloop van tijd ook combinaties van beide constructies voor, wat leidt tot clusters van vier en meer werkwoorden. De combinatie van deze ontwikkelingen zorgt ervoor dat het Nederlandse werkwoordsysteem steeds uitgebreider en analytischer wordt, wat bovendien leidt tot een duidelijke toename in de gemiddelde lengte van de werkwoordcluster.

De resultaten in dit proefschrift stellen de geleidelijke ontwikkeling in de richting van de 1-2 volgorde in clusters met twee werkwoorden in een ander daglicht. In sommige contexten, met name lange clusters, heeft vooropplaatsing van het finiete werkwoord de voorkeur. Dit hebben we verklaard aan de hand van het principe *Avoid Syntagm Ambiguity*. Naarmate deze contexten vaker voorkomen doordat langere clusters frequenter worden, worden taalleerders vaker blootgesteld aan vooropplaatsing van het finiete werkwoord. Hierdoor is deze volgorde mogelijk in de loop der eeuwen meer gefixeerd geraakt in de grammatica, in ieder geval in clusters met infinitieven. Dit scenario wordt ondersteund door het feit dat dialecten met langere clusters over het algemeen verder gevorderd zijn in de ontwikkeling richting de 1-2 volgorde.

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Curriculum Vitae

Griet Coupé (1978) grew up in Moerbeke, a village situated in the East-Flemish *Waasland*. After completing secondary education at the St. Lodewijkscollege in Lokeren, she studied Germanic Languages at Ghent University, specialising in English and Dutch linguistics. She did an internship in Stellenbosch, South Africa, and wrote her thesis on causative auxiliaries in Dutch and Afrikaans.

After graduating in 2000, she taught various linguistics courses at the universities of Ghent and Leuven and contributed to a large dialect geography research project in Leuven and Nijmegen, writing three issues of the *Woordenboek van de Brabantse Dialecten*. She also travelled through Asia for several months.

She started in 2005 as a PhD candidate at the Radboud University in Nijmegen, participating in an NWO-funded research project on syntactic change in Dutch. During her work as a PhD student, she contributed to compiling a large text corpus of Late Middle Dutch texts. She took various summer and winter schools in linguistics, presented her work at several international conferences and sporadically taught courses on language variation and change.

In 2009, Griet started working as a consultant and trainer at the Radboud University's educational department. Since 2012 she has been working as a staff member and teacher trainer at the Radboud Graduate School of Education.

She followed several drama courses and is a passionate player of improvisation theatre.

